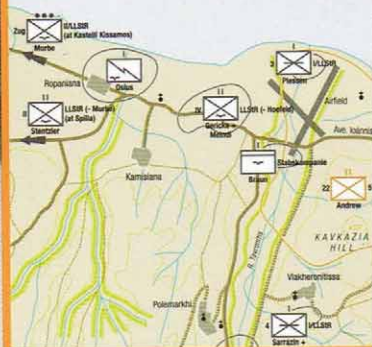
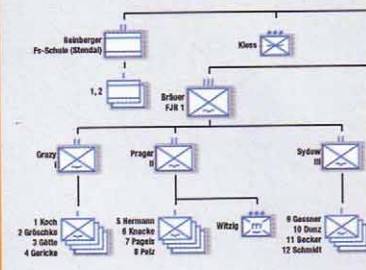


German Airborne Divisions

Blitzkrieg 1940–41



7 Fieger Division, 1 September 1939





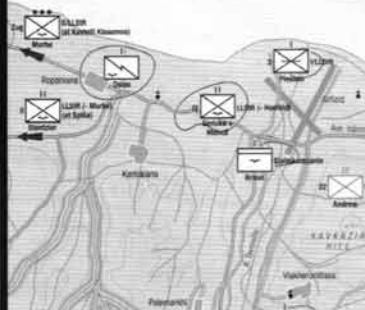
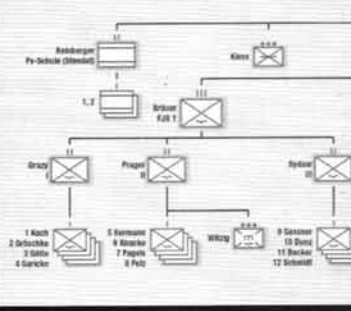
Bruce Quarrie entered journalism after graduating from Cambridge University in the 1960s and has since edited both *Airfix Magazine* and *Military Illustrated*. He wrote his first book, on wargaming, in 1974 and has subsequently specialised in the elite forces and campaigns of World War II, with 12 titles published by Osprey.

German Airborne Divisions

Blitzkrieg 1940–41



7 Flieger Division, 1 September 1939



Bruce Quarrie • Consultant editor Dr Dui

Series editors Marcus Cowper and Nikolai Bogdanovic

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ISBN 1 84176 571 6

Editorial by Ilios Publishing, Oxford, UK (www.iliospublishing.com)

Design: Bounford.com, Royston, UK

Maps by Bounford.com, Royston, UK

Index by Alison Worthington

Originated by The Electronic Page Company, Cwmbran, UK

Printed and bound by L-Rex Printing Company Ltd

04 05 06 07 08 10 9 8 7 6 5 4 3 2 1

A CIP catalogue record for this book is available from the British Library.

For a catalogue of all books published by Osprey Military and Aviation please contact:

Osprey Direct UK, P.O. Box 140, Wellingborough, Northants, NN8 2FA, UK

E-mail: info@ospreydirect.co.uk

Osprey Direct USA, c/o MBI Publishing, P.O. Box 1, 729 Prospect Ave, Osceola, WI 54020, USA

E-mail: info@ospreydirectusa.com

www.ospreypublishing.com

Acknowledgements

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Key to military symbols

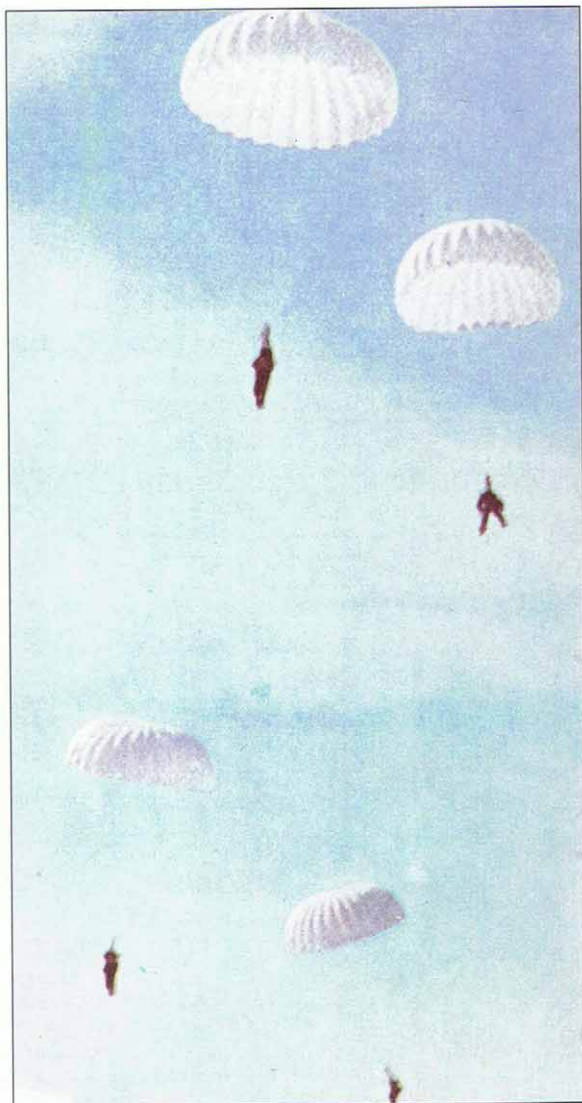
Army Group	Army	Corps	Division	Brigade	Regiment	Battalion	Company	Platoon
Section	Squad	Infantry	Armor	Artillery	Engineer	Headquarters	Heavy	Reconnaissance
Medical	Military Police	Equipment	Signal	Anti-tank	Mortar	Machine gun	Radio	Surveying
Motorcycle	Quartermaster	Commissariat	Divisional Administration	Airborne	Airlanding	Anti-Aircraft	Weather Reconnaissance	Ammunition
Observation	Bridging	Bicycle	Telephone	Postal	Vet	Petrol, Oil, Lubricant	Butcher	Baker
						<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Key to unit identification</p> <p style="text-align: center;">Unit identifier Parent unit Commander</p> </div>		
Field Hospital	Ambulance	School	Fighter	Air Transport	Bomber			
Transportation	Air Force	Mountain	Band	Armored Car	Dive-bomber			

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Introduction

Parachutes catch the sunlight out of the Norwegian sky on 9 April 1940. Despite this clear warning, the airborne assaults against Belgium and Holland a month later seemed to come as a total surprise to the defenders.



Airborne warfare was not a new concept even in 1940, but the theory had never been properly translated into practice in a 'real life' situation before this. The successful German use of paratroops and gliders came as a shocking eye-opener to most of the world and both Britain and America urgently accelerated development of their own embryonic corps. Nor was the concept of blitzkrieg itself new, of course. The 'manoeuvre sur les derrières' came from Napoleon and over a hundred years later the 'strategy of the indirect approach' was propounded by a prophet largely without honour in his own country, the British Army Captain Basil Liddell Hart. Predating even these, back in 1783 when Napoleon was still an adolescent, the American scientist and statesman Benjamin Franklin had been so impressed with the Montgolfier brothers' first

manned hot-air balloon flight that he asked, 'Where is the prince who can so afford to cover his country with troops for its defence as that 10,000 men descending from the clouds might not in many places do an infinite deal of mischief?'

Napoleon himself considered using hot-air balloons to airland troops during the planned invasion of England; later, during the siege of Paris in the Franco-Prussian War of 1870-71, more serious thought was given to airlanding troops into the city using balloons. Then, in the closing stages of World War I the American Colonel 'Billy' Mitchell suggested parachute-dropping an entire division of 12,000 men on to the German-held fortress of Metz in order to break a costly stalemate. Mitchell was also an advocate of the dive-bomber in close support of ground forces, but on both counts he was ridiculed as a maverick and heretic - except in Germany.

General Kurt Student is popularly accredited as the 'founding father' of the German Fallschirm-und-Luftlandekorps. In fact, Hermann Göring and his first Luftwaffe chief of staff, General Walther Wever, were the real progenitors, although Student did most of the hard work to become something of a father figure, and he was certainly an inspirational leader, both demanding and caring of his men. It was actually the Italians, and especially the Russians, who first took Franklin's and Mitchell's ideas most to heart and the standard German parachute was modelled on the Italian Salvatore design. Early methods were primitive in the extreme compared with what was to follow. Soviet parachutists, for example, clambered on to the wings of slow-flying aircraft before somersaulting themselves backwards and pulling their ripcords. Needless to say, there was little precision in their grouping on landing, but Göring was impressed after watching a small demonstration exercise in 1931, which was followed by much larger displays over succeeding years.

At this time, before Hitler's appointment as Chancellor in 1933, Germany as well as Russia had a nominally socialist government. Moreover, both countries were shunned by the rest of Europe, Germany as the alleged instigator of World War I and Russia as the homeland of Bolshevik terrorists and regicides. This exclusion from 'civilisation' and membership of the League of Nations drew the strange bedfellows together despite the fact that they had been locked in combat until 1917. One key figure who, as early as 1919, had been quick to see advantages in this aberrant situation that could be exploited to help circumvent the punitive terms of the Treaty of Versailles was General Hans von Seeckt, head of the Truppenamt – which was little more than a cover name for the General Staff the Allies thought they had abolished.

Von Seeckt became C-in-C of the defeated German army in 1920 (Chef der Heeresleitung) and took inspiration from the example of Prussia in 1807–13 when, beaten by Napoleon at Jena, Auerstadt and Eylau, the army was rebuilt through the Landwehr, the regional militia. The resurgent Prussian forces came as a nasty surprise to the French during the campaigns of 1813–15 and von Seeckt hoped a resurrected German army would be so again a century later. In 1923 he helped steer through a secret commercial agreement with the Soviet leader, Lenin, under which German troops would be permitted the use of Russian training facilities in return for German engineers helping to rebuild and modernise Soviet factories gutted by revolution and civil war.

During 1922–26 von Seeckt and his chief of staff, the then lowly Oberstleutnant Albert Kesselring, also initiated a far-reaching clandestine military revitalisation programme in Germany itself, under the cover name Arbeitskommando, whose real purpose again eluded detection by the various Allied control commissions. The Reichswehr itself was restricted to a standing force of 100,000 men including an officer corps of 4,000 – but who was going to look closely at their names? Officers and men were therefore rotated through the active and reserve lists, with officers being trained in General Staff expertise and, while 'inactive', being sent to technical colleges and universities to broaden their skills, sometimes taking their 'vacations' in Russia. This way, von Seeckt began building up the basis for a highly trained secret army more than three times the permissible size.

Additionally, because of the street battles that wracked Germany in the 1920s, the Allies allowed the police force to be expanded by the creation of the Landespolizei, provincial riot police permitted the use of armoured cars and machine guns. A new frontier force was also formed to patrol Germany's eastern borders, the Grenzschutz Ost. It was partly through these paramilitary cadres as well that the German armed forces could later be rebuilt so swiftly. Von Seeckt also drew upon the lessons of World War I to initiate sweeping changes in training and procedures that were highly influential in the later development of the German airborne forces.

Whilst Germany was thus rebuilding a skilled and motivated military machine with modern attitudes that would astonish and terrify Europe in 1939–41, the British, French and others reverted to complacency and America retired into isolation. European armies were reduced to a size sufficient for peacekeeping duties in the far-flung colonies, their budgets were slashed and technological advances in, for example, aircraft and tanks, were largely left to private enterprise. British Army officers played polo and the Royal Air Force similarly played with its glamorous but already obsolescent silver biplanes. As for tactical air support for ground forces, the RAF hierarchy was so concerned with jealously preserving its newly won independence that it refused to be subordinated to such a menial role. Dive-bombers and ground-attack aircraft were anathema.

How different the attitudes in Germany, where the operational and tactical advantages of close cooperation between air and land forces were seen clearly, especially by those men who had experienced action in the trenches as well as



General Hans von Seeckt (left), seen here accompanying President Hindenburg during a parade in the early 1920s, was the driving force behind the revival of the German armed forces in the aftermath of World War I. However, Hindenburg thought he was 'ruining' the officer corps and von Seeckt was forced into retirement in 1926. He then went on to train Chiang Kai-shek's Kuomintang. Many people welcomed Hindenburg's death in 1934.

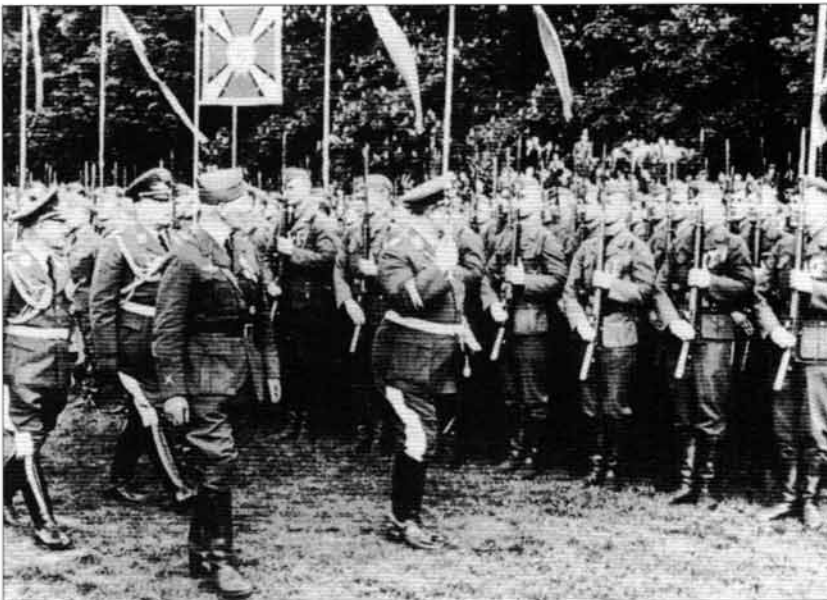
in the air during World War I – Hermann Göring himself, Erhard Milch, Wolfram von Richthofen, Hugo Sperrle, Ernst Udet and others whose names will recur – including Kurt Student, of course.

Göring recognised Adolf Hitler's strange magnetism very early and was an influential figure in the rise of the NSDAP. He was far more intelligent than he is often given credit for and extremely ambitious as well as totally unscrupulous, perfectly prepared to use his status as a winner of Prussia's highest decoration, the Pour le Mérite, to lend 'respectability' to the Nazis in order to further his own aims. Elected to the Reichstag in 1928, he became Prussian Minister of the Interior and head of the police force; it was actually while in this position, not as head of the Luftwaffe, that he initiated the first moves towards what would become the Fallschirm-und-Luftlandekorps. He had a handful of Berlin policemen trained in parachute jumping so that they could literally 'drop in' on criminal conspirators without alerting them, as a swarm of cars would have done. The subsequent evolution of this tiny force is outlined later, but the primary Fallschirmkorps role was thus predestined even before it began taking shape properly: it was to be a pure assault force for similar short, sharp offensive operations, albeit on a larger scale.

Combat mission

With the Fallschirmkorps' primary role thus identified in principle at least, what remained was to define and refine the actual format of its battlefield function. An early suggestion was that part of that function, thanks to the corps' police origin, should be for special operations such as hostage rescue, behind-the-lines sabotage, intelligence-gathering or even kidnapping enemy VIPs. Some German theorists in the mid-1930s believed that this type of operation should actually take priority. That, however, would have meant limiting the Fallschirmkorps to just a small special detachment, a Sonderkommando, and Göring had much more grandiose ideas. Even he, with all his enormous influence within the Nazi Party, had to justify those ideas and come up with acceptable reasons for the formation of a larger corps when German resources were already overstretched in a massive reconstruction programme as well as a military commitment in Spain. This meant that his paratroops had to find a secure niche within the emerging blitzkrieg concept. Fortunately, that already relied heavily on the sort of close cooperation between air and ground forces being pioneered by the Legion 'Kondor' under Hugo Sperrle and Wolfram von Richthofen.

Liddell Hart's book *Strategy of the Indirect Approach* was required reading for German staff officers and provided part of the key Göring needed. The Englishman's doctrine, actually more tactical than strategic (and greatly influenced by the Germans' own successful use of hard-hitting assault companies and infiltration tactics during the later stages of World War I), called for bypassing strongpoints in the trenches to sweep into an enemy's rear areas and eliminate his main command and communications centres miles behind the front line. Göring and his protégé Student argued that parachute, glider and airlanding troops could accomplish this type of task even more quickly and efficiently through what has aptly been called 'vertical envelopment' – an outflanking manoeuvre using the third dimension. Chopping off the enemy's 'head' would leave the 'body' incapable of fighting back effectively against the



Reichsmarschall Hermann Göring inspects troops returned from Spain in 1939 accompanied by the two successive leaders of the Legion 'Kondor', Generals Hugo Sperrle and Wolfram von Richthofen. The Spanish Civil War was a proving ground both for many of von Seeckt's reforms and for elements of the blitzkrieg concept.

follow-through ground forces. As it happened, this concept was only really applied operationally once, in Holland in 1940 with the attempt to capture the Royal Family and the government offices in Den Haag, but, for Göring and Student, the idea provided a cogent argument in favour of the airborne forces. (The original police-style ideas themselves, in fact, were only employed twice – once in 1943 with the rescue of Mussolini after the Italian surrender, and once in 1944 with a raid in Yugoslavia to kill or capture the communist partisan leader Tito. There was no attempt at small-scale sabotage or intelligence-gathering missions, although the British used these ideas later at Tragino and Bruneval.)

Göring and Student were enthusiasts and once their ideas started emerging, they steamrolled. Needless to say, the two men were not without their critics and opponents, particularly within the older, more conservative, membership of the army hierarchy. They needed more ammunition so, to the concepts already mentioned they added that of laying an airborne 'carpet' for conventional land forces by capturing key objectives such as bridges before the enemy could demolish them and which the Panzers could then use instead of having to wait for engineers to construct pontoons. In the event, it was this idea that found most favour with the army and was successfully employed in Holland, Belgium and later with partial success in Greece.

With his eye on the Luftwaffe's requirements perhaps more than the army's – even though he needed army support for his plans – Göring added a fourth role for the airborne corps: the seizure of enemy airfields that German fighters and bombers could then use to extend either their range or their sortie rates. Success by the parachute troops in such operations would also permit airlanding reinforcements that could be used to expand the initial bridgeheads. This tactic was used with mixed results in Norway, Denmark, Holland and on Crete.

The final idea, also much favoured by the army, was for airborne forces to be used en masse in order to create a strong, instantaneous, new front line at a time and place which would be totally unexpected to the enemy. As it happened, the invasion of Crete was the only occasion the German airborne forces attempted anything on this scale, and then the operation had to be launched in the full knowledge that the Allies knew not only where but also when they were coming, so it was left to the Americans and British to take the concept to maturity with the successful deployment of three entire divisions in practically simultaneous drops in Normandy.

Even though Göring and Student managed to convince enough sceptics that their ideas could work, they still ran up against the same sort of almost hereditary obstinacy that, for example, precluded Heinrich Himmler from expanding the Waffen-SS as much or as quickly as he would have liked. Most of the resistance came from the Heer, the 'sole arms-bearer of the State'. The army was Hitler's real power base, not the electorate or the brownshirt Sturmabteilung (SA). He needed its support in order to maintain his position, so he could not afford to offend it unduly. How the Führer lobotomised the SA and later so eroded the army's autonomy and authority that it became his personal tool are beyond the scope of this volume. In any case neither was of great interest to Göring at the time he was trying to get his Fallschirmkorps up and running. He therefore resorted to subterfuge (as Himmler later did with the Waffen-SS) and managed to get all parachute and glider units incorporated into the Luftwaffe instead of the Heer. Even then, Göring was unable to manipulate the transfer of the entire infantry division he wanted for the airlanding role from the army to the air force. While 7 Flieger Division, authorised in 1938, was thus a Luftwaffe unit, 22 Infanterie Division remained part of the Heer even when the suffix 'Luftlande' was added in 1939. Given the fact that 187 army infantry divisions alone were mobilised in 14 'waves' (Wellen) during 1939–40, it can thus be seen that, despite Göring's aspirations, the airborne corps was numerically an insignificant fraction of the German war machine.



However, numbers are far from everything, and the deployments of Student's small Luftlandekorps (Fig. 18) in 1940 had a decisive effect on shortening the campaigns. None of the Germans' opponents had more than parachute test platoons and not even their wildest dreamers envisaged the sheer scale as well as the audacity and inventiveness of Student's airborne assault. To cap it all, none of the German troops involved had ever made a parachute jump or glider landing in a real war situation before. Many had previous combat experience, of course, but none of them had any real idea of what they might expect when their feet hit the ground. There had been no opportunity to 'test the water' in a smaller-scale operation, because the use of airborne troops was forbidden during the Polish campaign in order to preserve the critical element of surprise for when it would really count. And training exercises, rehearsals and operational doctrine, no matter how realistic and well planned, can only go so far.

Two squads of 12 men apiece lined up for inspection at Stendal. Note the ammunition bandoliers and the fact that each man carries a Sauer pistol (see Weapons and Equipment).

Preparation for war: doctrine and training

'You are the chosen fighting men of the Wehrmacht. You will seek combat and train yourselves to endure all hardships. Battle shall be your fulfilment.' Thus began Adolf Hitler's often quoted 'ten commandments' to his Fallschirmtruppe. There is a lot more typical rhetoric, and Fallschirmjäger doctrine – and, indeed, indoctrination – as well as training are discussed in more detail in Osprey's Warrior 38: *Fallschirmjäger* (Osprey, 2001). Here we shall be brief since further elements of both recur elsewhere in this book.

The key point to remember is that the paratroops were all volunteers, as were a large proportion of the men in 22 Infanterie Division, which meant that most were highly motivated. One significant difference between the two, though, was that the Fallschirmjäger came from every part of Germany and some from Austria and the Sudetenland, whereas those in the airlanding division were recruited from within a relatively small area of northern Germany. This gave the Luftlandetruppe the same type of regional affinity that helped knit together the men in an American National Guard or British County regiment and strengthen their battlefield resolve. Within the Fallschirmjäger, however, similar bonding was achieved by instilling allegiance to the corps itself through cultivating their belief that they were Hitler's 'chosen men'. The fact that they had a unique uniform, coupled to the rigours of the selection procedure and the intensive 16-week training programme, further reinforced the paras' sense of belonging to an elite – and they marched at the front of the Führer's 50th-birthday parade in April 1939 wearing jump smocks and parachute webbing.

A section of 12 Fallschirmjäger board their Ju 52 for a field exercise during the preparations for the invasion of the west in 1940. The man without a helmet is probably the despatcher who signals the men when to begin jumping.



Training went much further than learning how to jump out of an aeroplane, of course. A great deal of it was devoted to developing both initiative and teamwork as well as the high level of physical fitness necessary for the assault role. Initiative was needed because the men could find themselves widely scattered during a drop and without companions or leadership. Teamwork was vital because they could often expect themselves to be fighting superior forces until relieved, so if they did not work closely together once reunited they could quickly be overwhelmed. Physical fitness was even more essential than in a 'line' formation, both so that the initial attack could be carried through at top speed and so that the men would have the stamina to endure the waiting period – probably under heavy fire – before conventional ground forces reached them. There is a quote I particularly like from a member of the US 101st Airborne Division at Bastogne in December 1944 who, when told by a war correspondent that the town was surrounded, shrugged and said, 'We're paratroops. We're supposed to be surrounded.' Of such insouciance are the paras of all nations moulded and the Fallschirmjäger are the acknowledged instigators of the tradition.

The men came from all walks of life as well as different regions and were trained to mental as well as physical resilience. Often, simple endurance is the most important characteristic of a soldier. Some of them, particularly officers and senior NCOs, were veterans of World War I. Some had been volunteers in the interwar Reichswehr who had benefited from von Seeckt's reforms, or in the Landespolizei. A few had fought in Spain. Others were inexperienced but enthusiastic 18- and 19-year-olds whose formative adolescent years had been spent under Nazi rule in the paramilitary Hitlerjugend. Most of the paras came from the Luftwaffe, but there was a strong contingent from the Heer and even a sprinkling who voluntarily transferred from the Kriegsmarine. The airborne corps therefore benefited from a wide variety of talent and experience. Few of its members were diehard Nazis; Kurt Student and most of the officers he chose were certainly not, even though they all had to swear the same oath of allegiance to the Führer. But they were Germans. They were proud members of a nation that considered it had been betrayed, not beaten, in World War I. They were eager to rebuild and prove themselves, so Hitler's injunction to 'seek combat' struck a deep chord.

Of equal significance, they were proud members of a brand-new military organisation, one which they had to prove in combat and create traditions for, one which had no previous experience to draw upon and for which they had to construct their own field manual, using imagination, theory and experimentation. For this, Student and his peers took inspiration from many sources, including Liddell Hart's writing and Erwin Rommel's bestseller *Infanterie Greift An* ('Infantry Attacks'), a study of light infantry methods based on his own experiences with a Gebirgsjäger battalion on the Italian front during World War I. More inspiration came from the type of training initiated by von Seeckt and Kesselring in the 1920s.

Doctrine therefore concentrated on the light infantry assault role, on speed and raw aggression. The emphasis from squad level up was on fire and manoeuvre or 'shoot'n'scoot' – don't get pinned down, keep leapfrogging forward while the mortar and heavy machine-gun sections provide covering fire. Loss of momentum was the worst eventuality of all; the enemy had to be kept off balance until the objective was secured. This, of course, was not a philosophy within the Fallschirmjäger alone; it was intrinsic to the whole concept of blitzkrieg. Nevertheless, Fallschirmjäger training – and some of that within 22 Infanterie Division when it was converted to the airlanding role – was different to that within an ordinary infantry division, whose functions were largely those of mopping up behind the Panzer and motorised formations, consolidating the flanks, repelling counterattacks and taking a head count of prisoners.

Training, after completion of the six necessary qualifying jumps, took place on many different levels. However, because the Fallschirmkorps was so small, field exercises were mostly at platoon and company level, rarely extending to the deployment of a whole battalion with artillery, anti-tank and anti-aircraft contingents. Prewar, support units were still insignificantly small anyway, and for the 1940 campaigns the targets were so different and so widely dispersed that each unit practised for its assigned mission in almost complete isolation, using different training and exercise areas from Braunschweig and Hildesheim to Sennelager and Stendal. 7 Flieger Division was never dropped in its entirety during manoeuvres, not even during the countdown to Crete in 1941, the first and last time it was deployed en masse. Even then, the men were split into separate groups for the assault itself although the intention was that they should be able to link up with each other for a coordinated follow-through.

Doctrine and training thus concentrated almost entirely on the initial phase of each operation, which solely involved the Schützen-, Maschinengewehr-, Pionier-, Nachrichten- and Sanitäts-Kompanien. Air-dropping the artillery, including anti-tank and anti-aircraft guns and crews, was also usually rehearsed separately, while exploitation of the anticipated successes by Panzer, motorised or amphibious formations was left up to the army to prepare and train for. Nor was most training within 22 Luftlande Division's actual airlanding units really that much different to that within a 'line' motorised division. In one of the latter, the men still had to dismount from their trucks or half-tracks in order to fight and expected to be thrown into the thick of things just as quickly as the airlanding troops themselves would be when they scrambled out of their Ju 52s. Where the airlanding troops found themselves at a distinct disadvantage was in a combat situation when the paras had not been able to subdue the immediate opposition first. If a truck comes under fire, it may be able to reverse hastily into dead ground to allow its occupants to deploy safely. An aeroplane on its final landing approach can hardly do the same, and most of 22 Luftlande Division's casualties in 1940 occurred because the men were decimated before they could even get out of their Ju 52s. In a situation like this, neither doctrine and training nor experience are of the slightest help, so leadership for the survivors assumed even greater significance than usual.



Hitler with two of his 'chosen men', Joachim Meißner and Walter Kiess, after he personally awarded their Knights Crosses following the attacks on Eben Emael and the Albert Canal bridges.

Command, control, communications and intelligence (C3I)

Command

Overall command of all German armed forces was ultimately vested in Adolf Hitler himself and the staff of the Führerhauptquartier. Below this, top of the pyramid was the tri-service Oberkommando der Wehrmacht (OKW), which was intended to act as a coordinating mechanism but which rarely ran smoothly because of personality clashes and Hitler's own constant interference. The pyramid then expanded downwards through the Oberkommando des Heeres (OKH), Oberkommando der Luftwaffe (OKL) and Oberkommando der Marine (OKM). All had their own inter-departmental prerogatives, rivalries and jealousies, which led to some strange situations. For example, the Luftwaffe had responsibility for air defence so all the Flak companies attached to infantry divisions were manned by air force personnel until after the French campaign, when the Heer was finally allowed to begin forming its own battalions. Even then, their guns and the ammunition for them had to come through the Luftwaffe's procurement office.

Going down another level the largest formations were the Armeen- and Heeresgruppen, which were assigned identifying letters – A, B, C, etc. Armeen had their numbers spelt out – Erste, Zweiter, Dritter – or shown in Arabic prefixes, 1, 2, 3, etc, while Luftflotten used Arabic numerals but as suffixes, eg, Luftflotte 2. Korps and Fliegerkorps were given Roman prefixes, eg, XI Fliegerkorps. Divisions were given Arabic prefixes, such as 7 Flieger and 22 Luftlande. Arabic numerals were again used for Regimenter but as suffixes, eg, FJR 1, then Roman reappeared for Bataillone and Abteilungen, eg, II/FJR 1. The Luftwaffe did not have a flying equivalent to a division and the Geschwader were classified and numbered like Regimenter, eg, KGzbV 1. Within a Geschwader, the Gruppen were numbered like

The German high command pyramid personified. From left to right, Erhard Milch (OKL), Wilhelm Keitel (OKW), Walter von Brauchitsch (OKH) and Erich Raeder (OKM), at a parade in Berlin in 1938 or '39. Keitel was the first CO of 22 Infanterie Division in 1934.



Generaloberst Kurt Arthur Benno Student

1890 Born 12 May, Birkholz, Brandenburg (East Prussia)
1901–10 Military cadet at Potsdam and Lichterfelde
1910 Fähnrich in I Bataillon, Infanterie Regiment 'Graf von Wartenburg'
1911 Promoted to Leutnant
1913 Transferred to Imperial Flying Service, training at Johannisthal
1914–15 Fighter pilot on Western Front; promoted to Oberleutnant
1916 CO of Jagdstaffel 9 in France
1917 Married Gertrud; severely injured in aerial combat
1918 Promoted to Hauptmann
1920 Posted to Fliegerzentrale
1921–23 CO of glider training courses in the Deutsche Luftsportverband
1923–28 Technical consultant to the Reichswehrministerium
1928–33 Promoted to Major; CO of I Bataillon, Regiment 'Graf von Wartenburg'
1934 Promoted to Obersteutnant; Director of Technischen Amt des Generalfliegermeisters
1935 Promoted to Oberst; Director of Erprobungsstelle für Fluggerät
1938 Promoted to Generalmajor; CO of 7 Flieger Division and Inspekteur der Fallschirmschule
1939 Additionally, Inspekteur des Fallschirm- und Luftlandetruppe
1940 Promoted to Generalleutnant (January); Ritterkreuz (May); promoted to General der Flieger (August)
1941 CO of XI Fliegerkorps (January)
1943 Eichenlaub den Ritterkreuz (September)
1944 Stab, Oberkommando des Fallschirmtruppe (March); promoted to Generaloberst (July); CO of I Fallschirm Armee (September); CO then deputy CO under Blaskowitz of Armeegruppe H (November)
1945 CO of Armeegruppe 'Wischel' ('Vistula') (April); captured by British in Schleswig-Holstein
1948 Acquitted of war crimes 1965 Retired
1978 Died 1 July, Lemgo, West Germany

Bataillone, eg, II/KGzBV 1. Below these levels, Arabic numerals were always used but because, for instance, Nr. 5 Kompanie or Staffel was always in II Bataillon or Gruppe, it was not necessary to write 5.II/FJR 1 because 5./FJR 1 would suffice. However, the longer form was often retained anyway. Right at the bottom of the scale, Züge and Kette were sometimes named after colours and sometimes given Arabic numerals but, below this, individual sections, squads and flights were often just named after their commanders. Both the Heer and Luftwaffe did also use the terms Brigade and Kampfgruppe for temporary or semi-permanent formations of indeterminate size.

Field Marshals commanded army groups, Generals armies, corps and divisions, Colonels or Lieutenant-Colonels regiments, Majors or Captains battalions, Captains or 1st Lieutenants companies, 2nd Lieutenants or senior NCOs platoons and junior NCOs or senior privates anything below this. However, the whole structure was so flexible – a theme that will recur – that many middle-level commanders on occasion outranked their titular COs. In fact, 'the right man for the right job' might almost have been a Wehrmacht motto. That mistakes were made, and both favouritism and prejudice put the wrong man in command on occasion, did not detract from the fact that the system worked very well as a whole and far better than that in most other contemporary armies, with class distinctions being almost eradicated and promotion being based much more on merit than pedigree. New officer candidates, for example, had to serve four years in the ranks before being commissioned. This gave the junior and middle levels who went to war in 1939–40 an intimate knowledge of the ordinary soldier's needs. The requirement for junior officers and NCOs to be able to take over the responsibilities of their seniors should they be killed, wounded, captured or simply go missing meant that many units were led in battle by men without the appropriate 'paper' rank – and nowhere was this more true than within the Fallschirmkorps.

Because of the risks inherent in the airborne troops' role, it was correctly anticipated that there would be a high casualty rate amongst front-line officers. However, they accepted this since Kurt Student himself was a commander who firmly believed in leading from the front and chafed at the restrictions placed upon him as a divisional and later corps and army commander. He was in the front line as soon as he was permitted, though, and paid the penalty in Holland by being severely wounded in the head by 'friendly' fire from a member of the Leibstandarte-SS 'Adolf Hitler'. The CO of 22 Luftlande Division, von Sponeck, was a like-minded officer who was also wounded in Holland.

Even divisional commanders could not operate in godlike isolation, but relied upon a team of professional staff who were hand-picked whenever possible. A divisional headquarters, which could consist of anything between 100 and 200 officers, NCOs and men, was itself completely flexible and could change in composition and strength on an almost daily basis, but certain key positions shown in the accompanying table were almost always maintained. The headquarters was divided into three interdependent administrative sections (*italicised*), each of which had its own staff.

Kurt Student is one of those who have been dubbed the 'shining knights' of the blitzkrieg era alongside Guderian, Kleist, Manstein and Rommel, for example, who stamped their personalities indelibly on everything they touched. Even Student depended heavily on his staff, though, and in particular on his friend and confidant, Heinrich Trettner. Despite this reliance, however, Student did not distance himself from his regimental and battalion commanders, all of whom were guaranteed virtually immediate access day or night. Significantly, he also listened to them and, even though decisions ultimately rested upon his shoulders, he encouraged debate during planning and training sessions. His willingness, even eagerness, to expose himself to danger permeated down through all the ranks of the Fallschirmtruppe. His subordinate officers in turn made themselves both visible and accessible, and the soundness of the Fallschirmjäger doctrine and

Divisionsstab (divisional staff)

Divisionskommandeur (divisional commander)

Führungsabteilung (tactical detachment)

la (Stabschef, chief of staff)

la op 1 (operations officer)

la op 2 (deputy operations officer)

lb (adjutant)

lc (intelligence officer)

lc AO (Abwehroffizier, attached)

Ordonnanzoffizier (ordnance officer)

Nachrichtenfürher (chief signals officer)

Adjutantur (personnel department)

IIa (commissioned personnel officer)

IIb (enlisted personnel officer)

III (judge advocate)

IVd (chaplain)

Quartiermeister (supply group)

Ib (quartermaster or chief supply officer)

IVa (chief administrative officer)

IVb (chief medical officer)

IVc (chief veterinary officer)

V (motor transport officer)

Waffen und Gerät (weapons and equipment officer)

Fliegeringenieur (airborne divisions only, chief flight engineering officer)

training showed itself time and again in action – for example, at Eben Emael, Canne, Korinthos and Máleme where junior officers had no hesitation in taking over when their superiors were incapacitated.

Part of this remarkable ability to improvise on the spot stemmed from the training initiated in the 1920s by von Seeckt, but both commissioned and non-commissioned officers' education ran much deeper than this. Nearly a hundred years earlier Helmuth von Moltke – the creator of the Prussian General Staff – said accurately if ingenuously that 'no battle plan survives the first encounter'. What this translated into in 1939–41 was the concept of *Auftragstaktik*, which essentially meant that the accomplishment of the mission came first so that detailed orders could be thrown away when necessary after that 'first encounter'. The emphasis was on results rather than rigid adherence to a formal battle plan (*Befehlstaktik*), and once again this was rarely more true than within the Fallschirm-und-Luftlandetruppe. Student therefore believed in giving his 'chosen men' a great deal of discretion even though it meant sacrificing a degree of security, because they all had to know at least the outline of the initial plan and what the short- and long-term objectives were. Both he and von Sponeck accepted the additional risk willingly. The core of 22 Luftlande Division comprised professional soldiers from the interwar Reichsheer, while up to and including the invasion of Crete all those in 7 Flieger Division were hand-picked volunteers, none of whom were likely to give away anything more than name, rank and number if captured.

Control

The command system within the Fallschirm-und-Luftlandekorps generally worked brilliantly and gave the lie to Allied propaganda that German soldiers were automata. Control is often difficult to exercise on a battlefield unless the troops at the 'sharp end' do know their roles and their superiors' motives and have some idea both of the enemy's capabilities and his own objectives. By comparison, in other European armies (and, later, the American) the rigidity of the military caste system often meant that the 'need to know' principle was a jealously guarded prerogative and the rank and file were just told what to do rather than why. This short-sighted attitude sometimes meant that, in a combat situation, the men could lose their will to fight and run around like headless chickens if their officer was killed or incapacitated, or just go to ground and wait for someone else to tell them what to do. It was this syndrome far more than what contemporary British and French newspapers attributed to superior German weaponry which accounted for the rapid collapse of the Western Front in 1940.



Studio portrait of Generaloberst Kurt Student after his award of the Oakleaves to the Knights Cross in 1943.

Student preferred exercising control from the front, an attitude he instilled in all his officers. Here he confers with Oberst Bernhard Ramcke (who took command at Måleme after General Meindl was critically wounded) in a rocky shelter on Crete.



The Fallschirmjäger – and, indeed, German soldiers in general – on the other hand, had less allegiance to their specific company or battalion than to the accomplishment of the mission, so were rarely demoralised if separated or when things went wrong and carried on regardless. Nevertheless, not everyone approved of this self-sufficiency and, for example, both Generals von Blumentritt and Reichenau complained that the Fallschirmjäger had ‘far too many ideas of their own’ and were ‘disobedient’! However, the shape of any mission can change radically after that ‘first encounter’ even though the ultimate aim may remain the same, and to exercise efficient control every commander needs reliable communications as well as morale and junior leadership.

Communications

Here you need to cast your mind back to before the conveniences of modern technology and return to a world in many respects more akin to the 19th than the 21st century. In terms of battlefield communications, time-honoured signalling methods such as semaphore and the heliograph were both widely used. So, believe it or not, were carrier pigeons, carried by German handlers four to a coop in a light box with shoulder straps like a rucksack. At platoon and squad level, whistles and hand signals, which would have been familiar to a Napoleonic Jäger, were the main essentials. Morse code was also still very much in use because a small battery-powered wireless telegraph (W/T) can transmit an audible signal much further than a radio telephone (R/T) transceiver.

Radio communications for military purposes were, to a degree, still in their infancy at the start of World War II. Radio was vital, though, because, particularly in a fluid situation, it enabled a divisional or corps commander who might be miles behind the front line to know straight away and with some exactitude where his sub-units were, what they were doing, any problems they were encountering or, conversely, any opportunities that could be exploited by rapid reinforcement. This knowledge in turn permitted almost instantaneous changes to battle plans if necessary – when the radios worked. They were distrusted by many in the military hierarchy because the thermionic valve sets then available were delicate and far from reliable, while the ‘crystal’, or germanium diode semiconductor, was still largely experimental. In the British Army, for example, with its reliance on fighting systematic set-piece battles, radio was then only considered appropriate for tanks and armoured reconnaissance vehicles; the infantry largely had to make do without. In this respect the Germans were considerably more advanced, because the motorised infantry and artillery were expected to keep up with the Panzers’ progress and obviously none could trail telephone wires behind them. In addition, the Germans were quick to realise the potential of radio as an infantry tool for

rapidly calling down air strikes or indirect artillery fire on targets they could see but the pilots and gunners could not. In 1940, for instance, a radio call from a battalion commander to the Luftwaffe liaison officer attached to the divisional staff could bring down an air strike within 15–20 minutes – largely thanks to the airborne troops' seizure of forward airfields and the fact that the air controllers themselves normally operated from radio trucks or half-tracks as close to the front line as possible.

From the outset, it was realised that the paras would need good long-range communications because they were to be landed miles behind enemy lines so telephones for keeping in touch with them were obviously out of the question until ground forces arrived. Fortunately, they fell under the aegis of the Luftwaffe rather than the Heer and air-to-air and air-to-ground radio systems were of necessity more sophisticated. While the pilot of an aircraft can often see things that are invisible to the troops on the ground, the converse is equally true, so training stressed the need for pinpointing landmarks easily identifiable to both. Even so, the field radios were fragile and the paras found that, however well wrapped and padded their sets were, they did not always survive the journey to the ground intact.

Two standard types were available to the Fallschirmjäger, either carried in gliders or dropped in parachute containers. Both were bulky and broken down into two or more loads for back-packing. They were battery-powered, although they could be run off a generator through a transformer in a static situation, and incorporated a microphone, headset and a Morse key. Forward artillery and air control officers wore headsets and trailed wires behind them from the command post so they could see and direct without exposing the radios themselves to enemy fire. The smaller of the two sets, issued at company level, was the Modell d2, which had an R/T range of 4km or a W/T range of 15km. The more powerful b1 used at battalion and regiment level had respective ranges of 10 and 25km.

Field telephones had advantages and disadvantages compared to radios. They were far more robust and reliable as they did not need valves; they were not subject to line of sight limitations, because a telephone line can be laid across a mountain ridge that could block a radio signal; they were far less susceptible to atmospheric disturbances and, except through physical wire-tapping, they formed a secure means of communication. One obvious disadvantage lay in the fact that they did need a physical wire link which took time to lay or re-lay and could easily be severed by a stray shell or bomb, wasting more time while the break was traced.

Telephones relied upon two things other than the wires connecting them and their mouth and earpieces: a battery at one or the other end of the line, to maintain a trickle charge of direct electrical current, and a hand-cranked magneto that would light up a bulb or ring a bell at the other end to tell the operator someone was calling. The lines themselves were laid from a reel carried on a man's back, sometimes using a bicycle. At a tactical level, the core of the system was a very simple, man-portable, ten-line exchange in a metal box with a carrying handle. It incorporated a DC battery to supply the trickle charge and a magneto-operated ring dial, and was used at company level with two or more lines running to adjacent company command posts, one or two lines back to battalion and/or regiment and, in the case of infantry companies, a line or lines to the local artillery commander. He in

Men from the signals battalion of a motorised division during the invasion of France, complete with pigeons!





Two Fallschirmjäger technicians man a bl radio set. The intense heat on Crete took a severe toll on the men on both sides.

A Jäger struggles forward under fire with a heavy reel of telephone cable on his back. It was a hazardous and unloved task, however necessary.

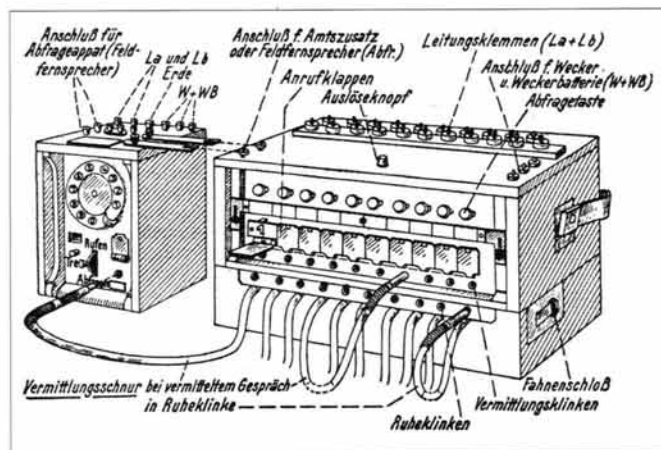


Diagram from a Wehrmacht manual showing the component parts of the ten-line field telephone exchange. More than ten connections could actually be made, though not at the same time, by simply swapping the wires attached to the brass thumbscrews.

turn would have an identical exchange with lines down to each gun battery, sideways to the infantry unit(s) he was supporting and upwards to regiment, brigade or division. Numbered light bulbs showed who was calling and a simple jackplug connection put the caller through to whomever he wished to speak to. Below this, at platoon and squad level where neither telephones nor radio were often available, runners carried messages as they have done for millennia.

Intelligence

In 1940 the Wehrmacht as a whole and the airborne corps in particular enjoyed one significant intelligence advantage over their opponents. Lufthansa operated flights to all

European capitals and for several years before the war started the airline's crews had been accumulating photographs of the terrain over which the Wehrmacht might have to operate. They also had detailed layout plans of every airfield capable of handling Ju 52s and, by analogy, Luftwaffe bombers and fighters. Abwehr and SS agents masquerading as tourists or businessmen provided further information. Even after England and France declared war in September 1939, Lufthansa maintained scheduled flights to neutral Belgium, Holland, Denmark and Norway, enabling the Abwehr to build up enormous portfolios on targets that would be assigned to the Luftlandekorps (Fig. 18). Not all objectives, obviously, were equally accessible – especially the key Belgian fortress of Eben Emael. However, the Abwehr still succeeded in providing the paras with highly detailed information culled from disaffected labourers who had been involved in its construction.

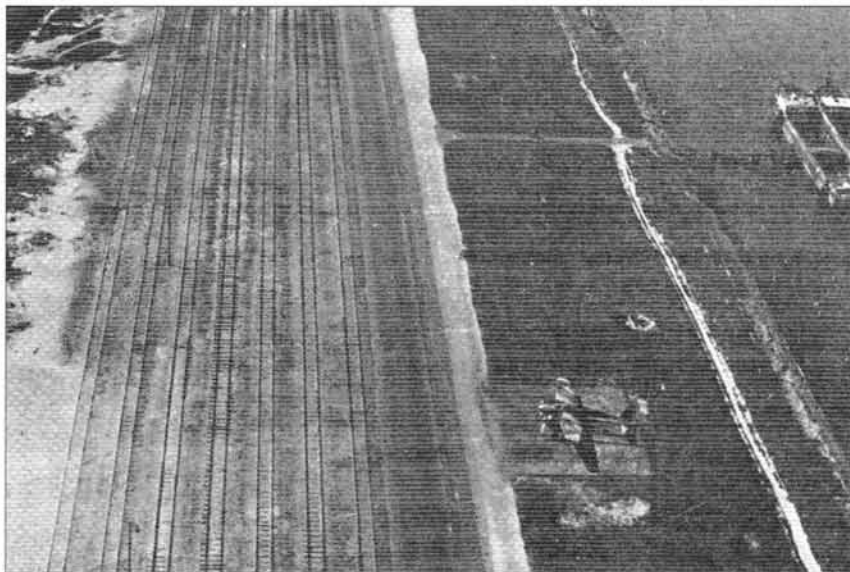
The one time the Abwehr really let the airborne troops down, though, was during the invasion of Crete in 1941. Not only had nobody thought of providing the assault battalions with maps until three days before the operation began – when they were hastily run off in the Greek government printing works in Athens! – but intelligence sources estimated that the bulk of the Allied expeditionary force evacuated from Greece in April had been shipped straight to Egypt. Instead of enjoying the local numerical advantage XI Fliegerkorps (Fig. 23) had anticipated at the key points on Crete, therefore, in some places the

paras found themselves swamped by overwhelming forces. Nor had the aerial reconnaissance flights conducted by VIII Fliegerkorps (Fig. 22) succeeded in pinpointing all the Allied strongpoints, because the island's extensive olive and almond tree groves provided remarkably effective camouflage.

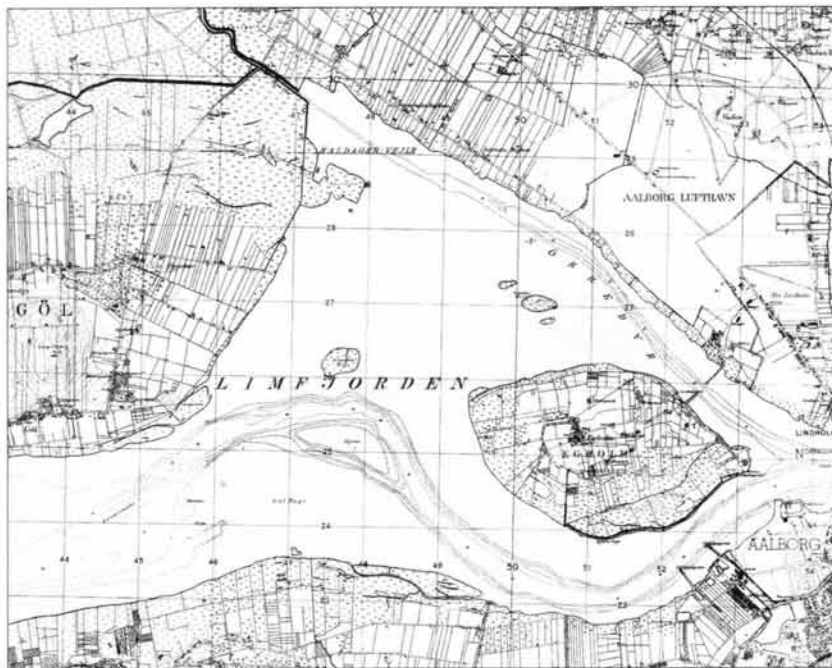
On a different level, interception of enemy radio communications could provide valuable clues to their dispositions and intentions. Here the Germans mistakenly thought they had a distinct advantage because at this stage of the war they firmly believed the 'Enigma' automatic encoding machine gave them total security – which it still did in May 1940 so the airborne landings and the Panzer assault through the Ardennes came as a total surprise to the Allies. In 1941, however, 'Enigma' had been cracked without the Germans' suspicion and the commander of the Allied forces on Crete, Major-General Bernard Freyberg, knew their plans for the invasion in considerable detail. The Allies lacked a comparable system to 'Enigma' but depended on daily code changes and 'one-time pads', which the German cryptanalysts could only nibble at and interpret fragmentarily and usually too late. In the field most radio communications were 'in clear' using a simple method of assigning codenames or numbers to units and physical features of the battlefield. The codenames on both sides were often unimaginative and their meanings could be interpreted fairly readily through taking them in the context of the situation. In the Wehrmacht, the radio interception detachment was normally part of a corps' signals battalion, with the intelligence appreciations then being passed down to the divisions.

At ground level intelligence gathering – like communications – largely relied on time-honoured methods. A valuable source was sympathisers amongst the civilian population and there were plenty of those in 1940: Belgians, Dutchmen, Frenchmen and Norwegians, large numbers of whom later helped swell the ranks of the Waffen-SS. Another source was obviously deserters, readily willing to 'spill the beans' in the hope of favourable treatment. A third was prisoners, either captured in the heat of battle or secured through sending snatch squads or platoons through the enemy lines at night. In this sense the Allied fixation on the 'need to know' principle actually worked in their favour, because the average rifleman could reveal very little and, unlike the SS, the Fallschirmjäger were not prone to beating or torturing POWs. The fourth main method was simply through observation, aerial or otherwise, watching and listening for sights and sounds of movement that could betray a redeployment or an impending attack. The obvious corollary to all this whichever side you were on was that the enemy would be using the same methods, but during the blitzkrieg era the Germans generally enjoyed aerial supremacy, the soldiery was highly motivated, desertion was virtually unknown and prisoners were confident that they would be released very soon. The only real risks were of an officer with a map case, or a despatch rider, getting lost and wandering into captivity – but even then there was the slight reassurance that the enemy would be suspicious of a 'plant' so might not be quick to respond.

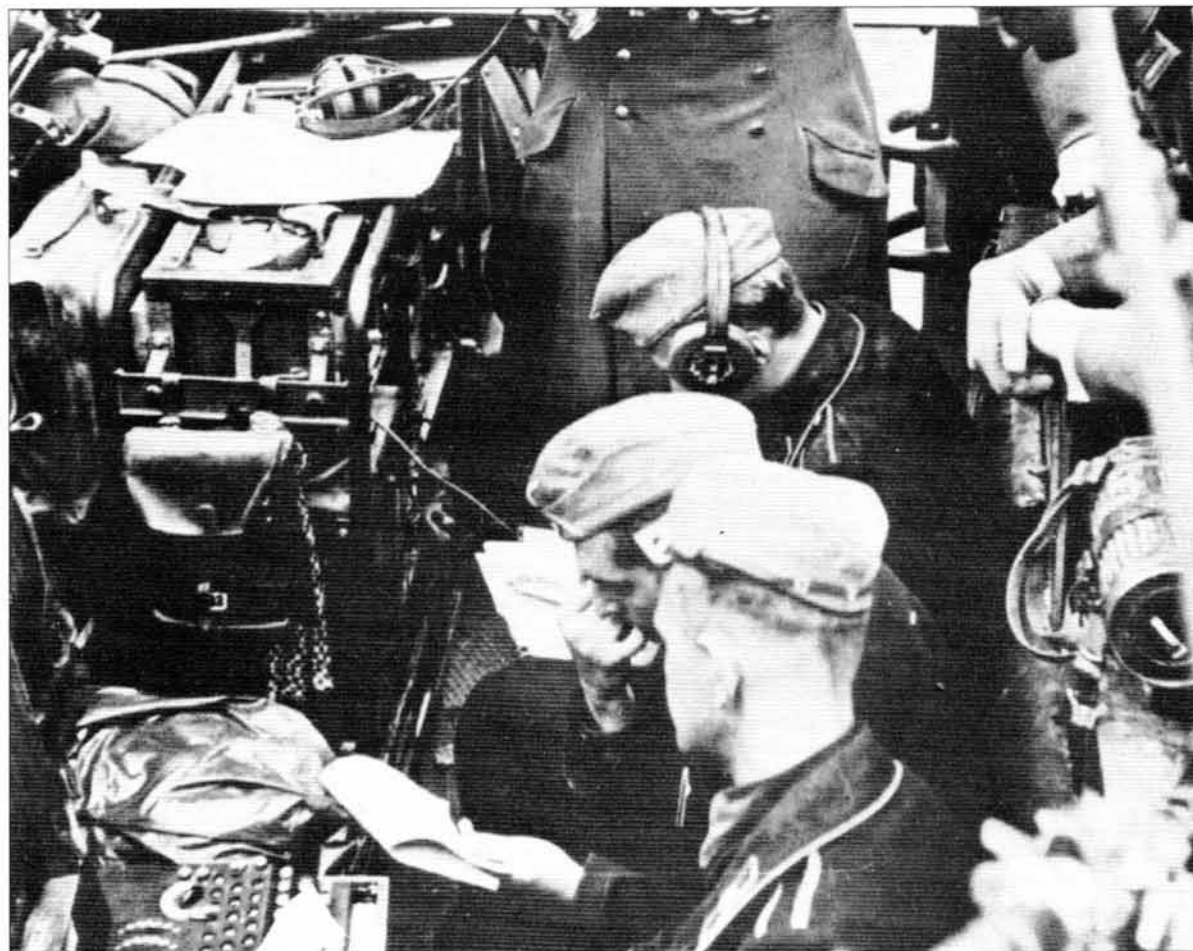
The value of prewar Lufthansa reconnaissance flights can be seen in this low-level shot taken over Rotterdam's rail lines on the landing approach to Waalhaven airfield.



The excellence of the German intelligence in 1940 is shown in this map of western Aalborg in Denmark clearly showing the airfield (Lufthavn). The original was prepared by the Geodaetisk Institut at 1:25,000 scale and was commercially available to anyone.



Signallers in an SdKfz 251 half-track with an Enigma coding machine during the invasion of France in which 22 Infanterie Division took part after the operations in Holland.





Rare view taken from the ventral 'dustbin' of a Ju 52/3mg3e bomber during the invasion of Norway in April 1940.

Ju 52/3m – packhorse of the Luftwaffe

The Junkers Ju 52/3m is one of those aircraft that has been declared 'classic' by pundits and had accolades heaped upon it that are almost completely undeserved. In truth, it was just a draught animal of the sky, reliable but plodding and not especially good at its job – more a donkey than a horse, in fact. Its closest Allied equivalent, the Douglas DC-3 Dakota/C-47 Skytrain, was virtually the same size in overall dimensions, had two engines delivering the same horsepower as the Ju 52's three but was faster and could carry a load two tonnes heavier nearly twice as far. However, the Ju 52's career is inextricably entwined with that of the Fallschirmtruppe, proving that even a donkey can have its day of glory.

The ending of World War I brought the German army home demoralised, confused and angry, left the navy humiliated at Scapa Flow and the air force abolished. Development of new military aircraft was prohibited, the navy was not allowed to build any new capital ships or U-boats and the size and equipment of the army were strictly limited. Part of the story of how these punitive restrictions were overcome even before the Nazis rose to power is discussed elsewhere, but here we must

examine another. For ten years after the Versailles Treaty came into force in January 1920 the German air industry was closely supervised by the Inter-Allied Aeronautical Commission of Control, which placed restrictions on aircraft engine power ratings and could veto any new design which its members thought might be adapted for military use. Thus, when Junkers Flugzeugwerke AG launched their advanced single-engine Ju-F13 all-metal, six-seat monoplane at the end of 1919 – for export to the United States! – it was initially disallowed.

A year later Junkers formed its own airline, which in 1926 merged with Aero Lloyd to become Deutsche Luft Hansa (renamed Lufthansa in 1934). Its original managing director was the World War I fighter pilot Erhard Milch, who clandestinely used his position to further the eventual rebirth of a German air force and subsequently became Göring's deputy. However, whilst pilots and navigators trained by Luft Hansa would eventually form a strong nucleus for the reconstituted Luftwaffe, there were never going to be nearly enough of them.

In 1921, the equally far-sighted General Hans von Seeckt covertly began forming a tiny air section (Luftaufsicht) within the Reichswehrministerium. Then in December 1923, as part of the secret treaty with the Soviet Union, he secured the use of an airfield at Lipetsk, a couple of hundred miles east of Moscow. Here, for ten years the Russians provided clandestine training facilities for hundreds of pilots, navigators, air gunners, mechanics and observers who were to form the core of the Luftwaffe. Amongst other things, they were allowed to rehearse tactics, which Luft Hansa crews obviously could not.

In the meanwhile, Junkers continued persevering with other projects and in 1928 chief designer Ernst Zindel began work on the Ju 52. The first prototype made its inaugural flight on 13 October 1930. Like the earlier transports, it was a low-wing, fixed undercarriage monoplane of the all-metal construction that had been patented by Professor Hugo Junkers in 1910. Having just a single engine, the first Ju 52s were grossly underpowered and only five were produced before Zindel put an extra engine in each wing, resulting in the first Ju 52/3m (tri-motor) which took to the air in April 1931.

By this time the Allied Control Commission had packed its bags and the new aircraft was an instant success.

Within a year, Luft Hansa had the Ju 52/3m operating on the Berlin–London and other inter-city routes and it soon proved its reliability and ruggedness by more than halving the airline's number of forced landings. It was these characteristics that led to the affectionate nicknames 'Tante Ju' and 'Eisen Annie' – 'Auntie Junkers' or 'Iron Annie'. A total of 4,835 Ju 52/3ms was built, many under licence abroad, and used by Lufthansa, the Luftwaffe and dozens of other airlines and air forces around the world. The last service aircraft was retired by Switzerland in 1983, but several are still maintained in airworthy condition by museums and private collectors for air displays, pleasure flights and use in period films.

Three years after the Ju 52/3m's initial flight, the militarised Ju 52/3mg3e began entering service with the RLM. This was an interim bomber with dorsal and ventral machine-gun positions, pending the introduction of more suitable types such as the Do 17 and He 111. The -g3e could carry up to 1,500kg of bombs in modified and reinforced lower cargo bays. With the outbreak of the Spanish Civil War on 18 July 1936, Germany quickly intervened on General Francisco Franco's side and Heinrich Trettner led 20 Ju 52s from KGr 88 on their first bombing missions in November. Although this role was soon abandoned and the machine rightly reverted to a transport, it kept dual capability with the result that all Ju 52 units until 1943 were designated KGzBV or KGrzBV, 'bomber wings/groups for special disposal', instead of Transportgruppen. The same flexibility allowed the Ju 52 to carry up to four of the Fallschirmjäger equipment containers with their static lines attached to the bomb shackles or on underwing racks, and the dorsal machine gun was also retained although the ventral 'dustbin' disappeared.

Like most German wartime aircraft, the 'Tante Ju' went through an almost bewildering catalogue of designation changes up to the Ju 52/3mg14e, with different engines, armament and landing gear, including floats and skis. The first model specifically modified for the Fallschirmtruppe in 1940 was the -g7e, which had a wider exit door necessitated by the 'spread-eagled' posture the men had to adopt when jumping. This was followed closely by the paras' definitive -g8e, which dispensed with the wheel spats that clogged with mud and grass on unsurfaced airstrips, and had the dorsal 7.92mm MG15 replaced by a more



LEFT Ju 52/3mg7es and -8es disgorges men of III/FJR. I over Waalhaven on 10 May 1940.

effective electrically operated 13mm MG131. These modifications were applied retrospectively to the -g7es. On both versions a cable ran down the starboard side of the cabin roof to which the paras snapped their static lines before stepping to the door on the port side. Over the target, the pilot switched on a green light behind the cockpit, alerting the Absetzer (despatcher) and the men jumped at one-second intervals when the siren squawked.

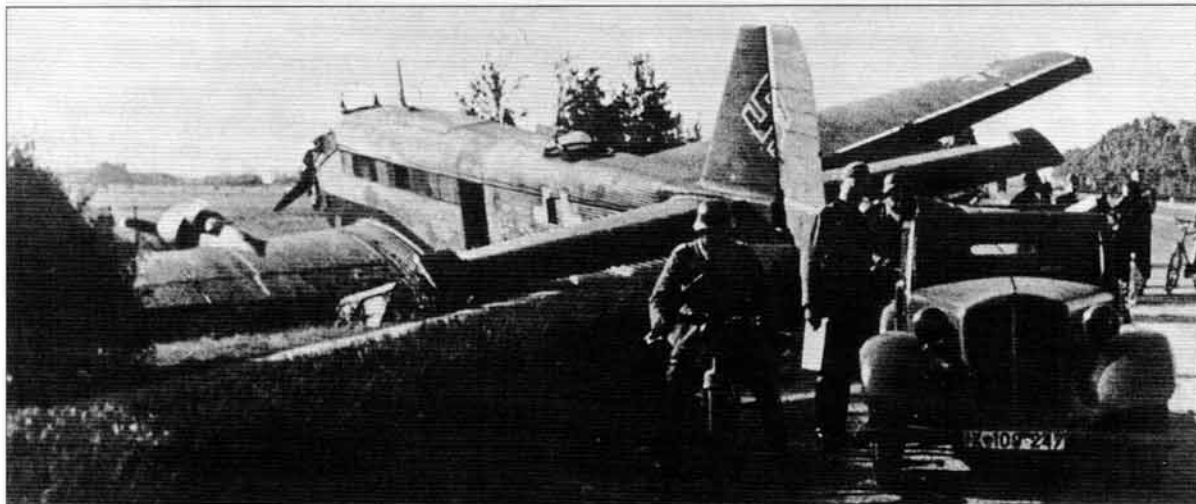
The Ju 52/3mg7es and -g8es assigned to 7 Flieger Division's transport groups

had BMW 132T-2 engines each delivering 830bhp on take-off. These gave the fully laden aircraft a cruising speed of 200km/h at 1,400m, tailored to the capabilities of the DFS 230 glider, and a top speed of 286km/h. Wingspan was 29.25m and length 18.9m, maximum loaded weight being 11,030kg. The Ju 52's cramped fuselage only allowed it to carry 12 paratroops, occasionally 13, hunched uncomfortably facing each other knee-to-knee on folding canvas benches, or 18 airlanding infantry without parachutes, whereas the rival C-47 could carry

28. Maximum round-trip range at this time was 1,280km. Where the Ju 52 was particularly impressive was in the STOL capability conferred by its 'double wing' design, a full-span auxiliary flying surface hinged to the trailing edge providing the aircraft with both ailerons and flaps for greater lift and lower stalling speed. This arrangement allowed it to land and take off from a 400m strip. The Ju 52 carried a basic crew of two plus the rear air-gunner, but sometimes an additional two beam machine guns were fitted to fire out of windows either side.

The Ju 52 equipped far too many units to list, even just during the 1939-41 period. Its first troop-carrying missions outside Spain involved 106 machines from I/ and II/KGzbV during the Anschluß with Austria and 242 during the annexation of the Sudetenland in 1938. The following year, 547 Ju 52s from KGzbV 1, 2 and 172 and KGrzbV 9 were involved during the Polish campaign. In April 1940, 573 from I-IV/KGzbV 1 and KGrzbV 101-107 participated in the invasions of Denmark and Norway. It was a similar story the following month when 401 aircraft from the Luftlandekorps' KGzbV 1 and 2 and 17/KGrzbV 5 took part in the invasions of Belgium and Holland; and on Crete, when XI Fliegerkorps' KGzbV 1-3 operated 502 Ju 52s. However, the aircraft did not always live up to its nickname of 'Iron Annie': 150 were lost in Norway, for example, 167 in Holland and 271 on Crete.

BELOW Not quite 'Iron Annie', a Ju 52 that just managed to belly-land at Ypenburg north of Den Haag on 10 May 1940.



Unit organisation (I): 22 Infanterie Division (Luftlande)

Introduction

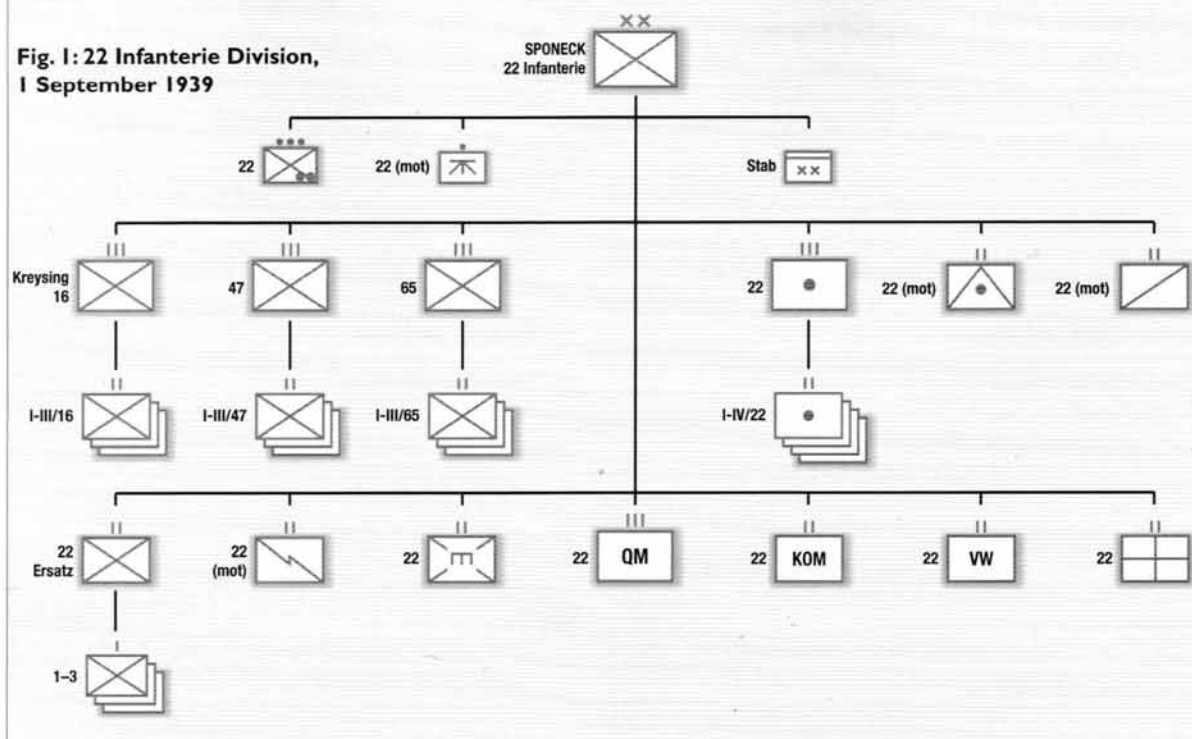
If it appears strange to deal with the organisation of 22 Infanterie Division before that of 7 Flieger Division, there is a very practical reason. The former was one of the original 39 infantry divisions created around cadres from the Reichsheer during 1934–38. As such, it almost forms an exemplar for all the infantry divisions of the early blitzkrieg period, although there were slight variations to the normal T/O&E, noted below, after it was given the airlanding role. By comparison, 7 Flieger Division was a 'maverick' Luftwaffe formation and far weaker in manpower and heavy weaponry. However, its internal organisation was closely based on the Heer standard, so it seems logical to address this first and detail the differences later.

22 Infanterie Division itself began forming quietly under the auspices of Wehrkreis X centred on Hamburg on 10 January 1934. (The Wehrkreise, or Military Districts responsible for recruitment and basic training, were another of von Seeckt's creations. Their Luftwaffe equivalent – although the parallel is inexact – were the Luftgaue, or Air Zones.) The division's nucleus was the Reichsheer's Niedersachsen (Lower Saxon) Infanterie Regiment Nr. 16 with its home station in Bremen and its first commander was Generalmajor (later Feldmarschall) Wilhelm Keitel. The division became official on 15 October 1935 following Hitler's repudiation of the Versailles Treaty and reintroduction of conscription, with its home station now a few miles west in Oldenburg and a

Comrades in arms: at an unidentified location in Holland in May 1940, two men from one of 22 Luftlande Division's rifle regiments have come to the assistance of a solitary Fallschirmjäger MG34 gunner. Although the quality is poor, it is a poignant photo.



**Fig. 1: 22 Infanterie Division,
1 September 1939**

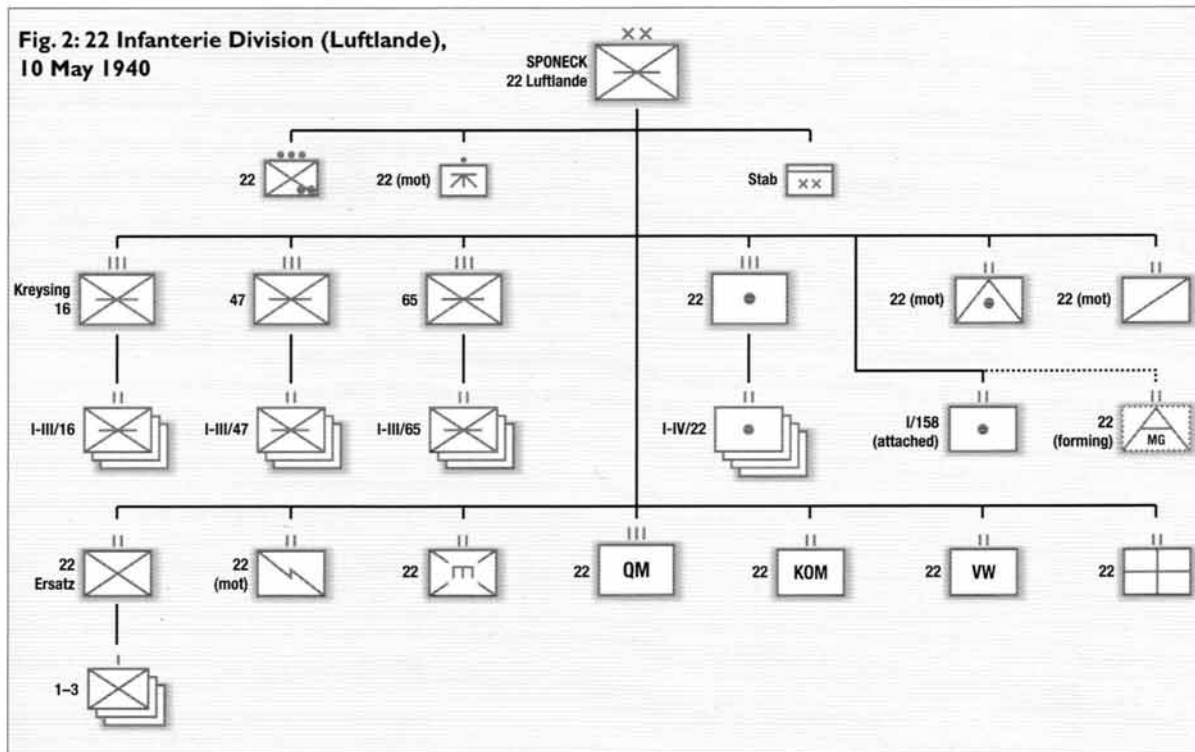


new CO, Generalleutnant Adolf Strauß. At this point, Infanterie Regiment 47 and 65 came 'on line'. Their personnel were largely new recruits from northern Hannover and Schleswig-Holstein around a cadre of experienced Reichsheer officers and NCOs. Many of the newcomers had, however, already received a high degree of military training through the Arbeitskommando. On 10 January 1938 Strauß handed over to Generalleutnant Graf Hans von Sponeck, who would remain the division's commander until 10 October 1941 when he was promoted to CO of XLII Korps in Russia. Despite his talents, von Sponeck was relieved of command, arrested and imprisoned in December 1942 for refusing to obey one of Hitler's nonsensical orders, and executed in 1944 on spurious charges of complicity in the July 'Bomb Plot'.

Backtracking momentarily to the year after Adolf Strauß assumed command of the division, in 1936 Ju 52s of the Spanish Nationalist Air Force were used to ferry 10,000 Moorish troops from Morocco to Spain. Following this example, elements of Infanterie Regiment 16 were airlifted in during the occupation of the Sudetenland in 1938. This experience provided the principal rationale behind their subsequent conversion, rather than that of another unit, to the airlanding role. Before this happened, the division as a whole (Fig. 1) was mobilised for war as part of the 'First Wave' (Erste Welle) on 18 August 1939 and the same regiment, commanded by Oberst Hans Kreysing, took part in the invasion of Poland as a component in Generaloberst Gerd von Rundstedt's Armeegruppe Süd. It distinguished itself during the vicious battle when the Poles counterattacked across the river Bzura west of Warsaw on 9 September. The relatively inexperienced Regiment 47 and 65 at this time were entrusted with less onerous duties safeguarding sections of the West Wall ('Siegfried Line') in the Eifel and Saarpfalz.

With the conclusion of the Polish campaign and no signs of any aggressive moves coming from France, the division's three infantry regiments were reunited at the Sennelager training and exercise area on the North German Plain in October. They, together with parts of the division's Pionier-Bataillon

**Fig. 2: 22 Infanterie Division (Luftlande),
10 May 1940**



and Nachrichten- and Sanitäts-Abteilungen, had been selected for further training in the airlanding role as backup for 7 Flieger Division's parachute and glider companies during the invasion of Western Europe being planned for the spring of 1940. The remainder of the division was never intended for this type of operation and retained conventional status, its artillery still being horse-drawn and not all of its other component units yet being fully motorised; that would have to wait until 1942, by which time the airlanding role had been abandoned in all but name anyway and it assumed fortress duties as the garrison on Crete.

The airlanding mission itself was an early subject of controversy and acrimony between the Heer and the Luftwaffe. The OKH had formed its own parachute unit, the schwere Fallschirm-Infanterie-Kompanie, in 1937 in imitation of the OKL's Fallschirmschützen-Bataillon recruited earlier. By the following year the army company had also been expanded to a full battalion so the army hierarchy was therefore not amused when Göring used his influence with Hitler to have its personnel transferred to the Luftwaffe as part of 7 Flieger Division in January 1939. Come October of the same year, then, when General Kurt Student was given authorisation to begin forming a Luftlandekorps to operate as part of Albert Kesselring's Luftflotte 2 during the campaign in the west (Fig. 18), the OKH stubbornly refused to part with any more men. They accepted 22 Infanterie Division's partial conversion to the airlanding role and adoption of the suffix 'Luftlande' to its title, and were forced to acknowledge that it should fall under Kesselring's and Student's operational command for the campaign itself, but not that it should be transferred lock, stock and barrel to the Luftwaffe.

General von Sponeck himself was far from unhappy with the new role, though, because it would put his men in the spotlight whereas the other unmotorised infantry divisions would have to endure a subsidiary position in the dusty wake of the Panzers. The majority thus took to their new training with relish, and by May 1940 they were ready for the challenge (Fig. 2 plus following table). Morale and discipline were both high, they were fit and well

22 Infanterie Division (Luftlande), 10 May 1940

Generalleutnant Graf Hans von Sponeck

Divisionsstab (see C31)

22 Landkarte Abteilung (motorisiert)

22 Motorradkurierzug

Infanterie Regiment 16

Stabskompanie

Nachrichtenzug

Bande

I/16 Bataillon

I-3 Schützenkompanien

4 Maschinengewehrkompanie

II/16 Bataillon

5-7 Schützenkompanien

8 Maschinengewehrkompanie

III/16 Bataillon

9-11 Schützenkompanien

12 Maschinengewehrkompanie

'13' Pionierkompanie

'14' Infanteriegeschützkompanie

'15' Panzerabwehrkompanie (motorisiert)

leichte Versorgungskolonie

Infanterie Regimenter 47 und 65

As Infanterie Regiment 16

22 Feldersatz-Bataillon

I-3 Schützenkompanien

Artillerie Regiment 22

Stabskompanie

Nachrichtenzug

Wetterungstrupp (motorisiert)

I/22 Artillerie-Bataillon

I-3 Batterien

II/22 Artillerie-Bataillon

4-6 Batterien

III/22 Artillerie-Bataillon

7-9 Batterien

IV/22 schwere Artillerie-Bataillon

10-12 Batterien

I/158 Artillerie-Bataillon (attached)

22 Panzerabwehr-Abteilung

Nachrichtenzug (motorisiert)

I-3 Panzerabwehrkompanien (motorisiert)

46 schwere Flak-Maschinengewehrkompanie (motorisiert)
(Luftwaffe, attached)

22 Aufklärungs-Abteilung

I, 2 Radfahren-Schwadrone

Panzerabwehrzug

Infanteriegeschütztrupp (motorisiert)

22 Pionier-Bataillon

I Pionierkompanie

2 Pionierkompanie (motorisiert)

Brückenkolonne (motorisiert)

leichte Pionier-Versorgungskolonie (motorisiert)

22 Nachrichten-Abteilung

I Funk-Kompanie (motorisiert)

2 Fernsprechkompanie (teilmotorisiert)

leichte Nachrichten-Versorgungskolonie

22 Verwaltungstruppe

22 Feldgendarmetrietrupp (motorisiert)

22 Feldpost-Trupp (motorisiert)

22 Veterinärkompanie

22 Kommissariat-Abteilung

22 Fleischereikompanie

22 Bäckereikompanie

22 Quartiermeister

I-8/22 leichte Kolonnen (motorisiert)

9/22 Kraftwagen Kolonne für Betriebsstoff

22 Aufrechterhaltungszug (motorisiert)

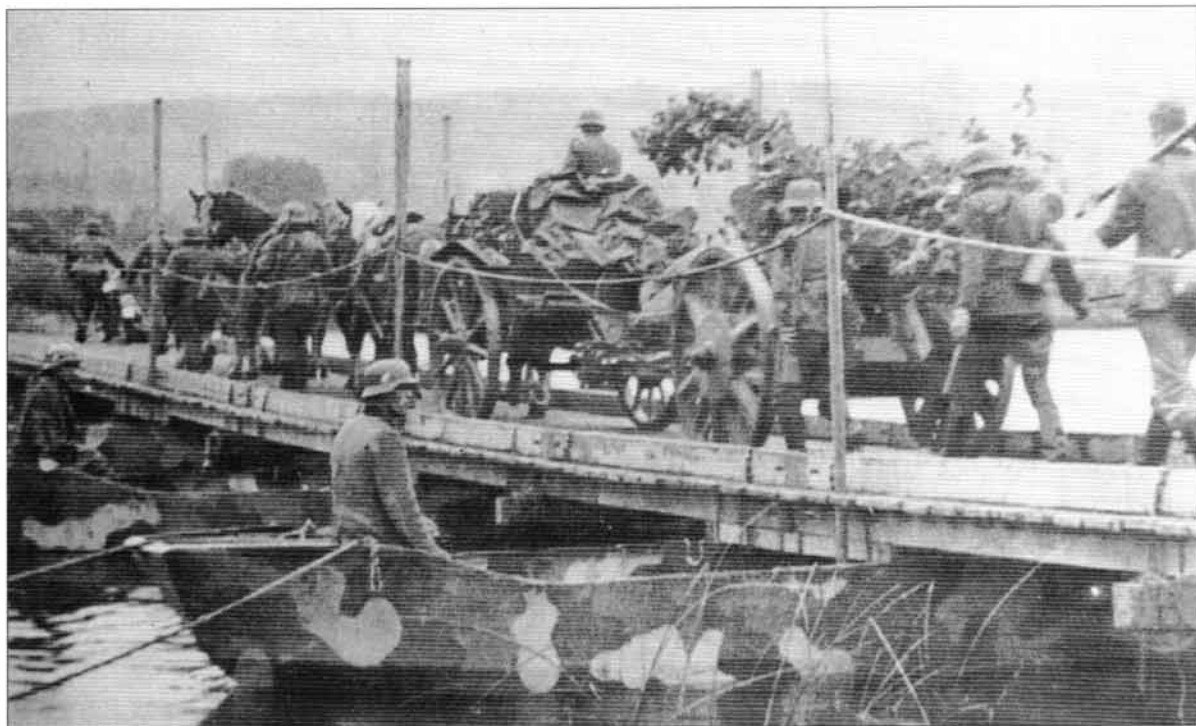
22 Versorgungskompanie (motorisiert)

22 Sanitäts-Abteilung

22 Sanitätskompanie

22 Feldlazarette (motorisiert)

I, 2/22 Krankenwagenkompanien (motorisiert)



trained in the concept of *Auftragstaktik*, and used to adopting unconventional approaches to tactical problems. They needed all of these qualities when the three infantry regiments were deployed in Holland. While *Infanterie Regiment 16*'s attack at *Waalhaven* and *Rotterdam* was a success, those of *Infanterie Regiment 47* and *65* at the airfields of *Ockenburg*, *Valkenburg* and *Ypenburg* around *Den Haag* resulted in very heavy casualties partly from aircraft crashes, partly through strong Dutch resistance after *7 Flieger Division*'s failure to secure all the objectives first, partly through poor coordination and partly through the men's own relative inexperience.

Reading the table in conjunction with *Fig. 2*, it can be seen that the division's overall organisation was almost standard for the period apart from the attachment of the extra *I/158 Artillerie-Bataillon* from the *Niedersachsen 58 Infanterie Division* (part of the *Zweiter Welle*, or second mobilisation wave). The *Ise Gliederung*, or actual establishment of 17,774 officers and men, is different from the *Soll Gliederung*, or intended establishment, of 16,977, mainly because the latter excludes the *Feldersatz-Bataillon* for some reason.

The division, infantry or otherwise, is the largest tactical component in any army. Corps are normally administrative conveniences, providing the operational link between the strategic and tactical levels even though the distinction is often blurred. Corps also usually have extra formations under direct command, particularly heavy artillery, construction engineers and bridging columns, but in the case of the *1940 Luftlandekorps* and *1941 XI Fliegerkorps*, those additional elements were principally the actual flying units (*Figs. 18, 22 and 23*). *22 Luftlande Division*'s staff company (see table in *C3I*) consisted of 20 officers and 132 NCOs and men, including *von Sponeck* himself, but two further components fell under direct divisional 'jurisdiction': the motorised *Landkarte* (mapping) detachment and the *Motorradkurier* (motorcycle messenger) platoon. Few German military topographical maps were better than 1:100,000 scale, so on-the-spot battlefield surveying was usually a necessity, while messengers were essential for carrying bulky documents whose contents could not be transmitted via radio, telephone or teletypewriter (telex).

Throughout the *blitzkrieg* era the majority of the infantry retained horse-drawn equipment and, although *22 Infanterie Division* was partially motorised and partially airlanding, its artillery still struggled forward in centuries-old fashion. Here a gun team crosses a light *Brückengerät K* bridge whose pontoons are held in place by *Pioniere*.

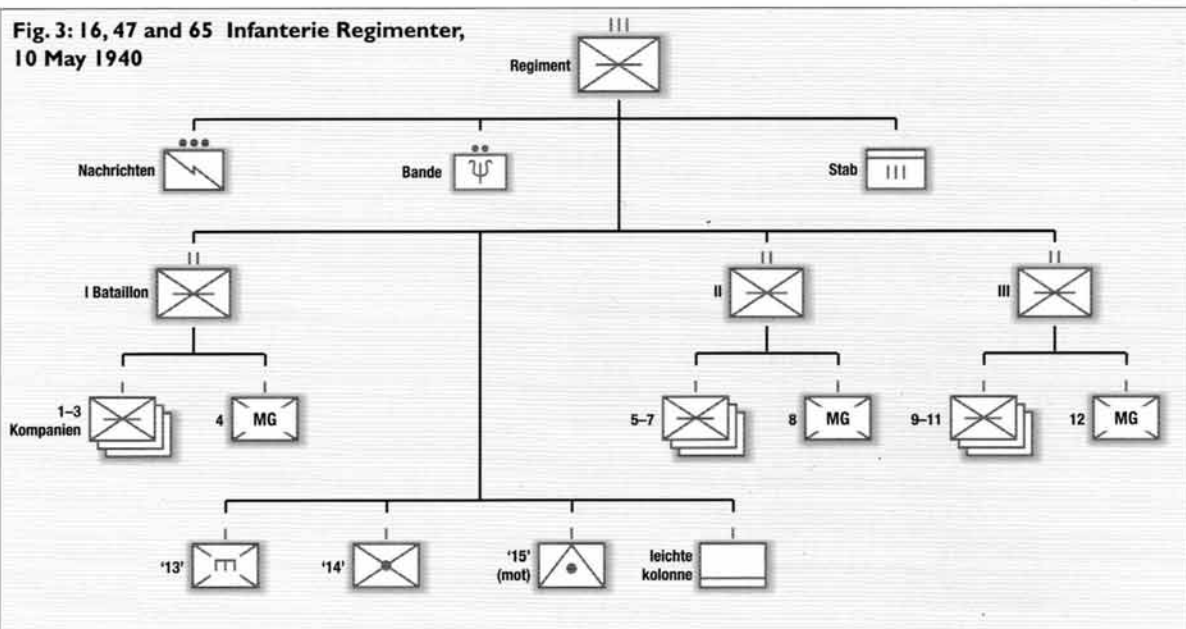
Infanterie Regimenter 16, 47 and 65 and 22 Feldersatz-Bataillon

The principal 'teeth' of an infantry division were its rifle regiments (Fig. 3), which, in 1940, normally numbered three (later often reduced to two). Each was commanded by an Oberst with a Major as Ia and consisted of a headquarters company (Stabskompanie), the regimental band (Bande), a signals platoon (Nachrichtenzug), nine rifle companies in three battalions (Nr. 1-3.I, 5-7.II and 9-11.III Schützenkompanien), three battalion support companies with machine guns and mortars (Nr. 4.I, 8.II and 12.III Maschinengewehrkompanien) and three regimental support companies, one each of engineers (Nr. 13, the Pionierkompanie), infantry guns (Nr. 14, the Infanteriegeschützkompanie) and anti-tank guns (Nr. 15, the Panzerabwehrkompanie). These had been renumbered since 1939 when the Pionierkompanie was Nr. 15.

A regiment was essentially the same as a British brigade, but was numerically stronger and with far greater firepower. Each regiment normally consisted of 3,159 officers and men at intended establishment, all of its personnel, as we have seen, drawn from a specific province or state (Land) within the Wehrkreis. (A British brigade in 1940 averaged 2,469 personnel.) Each of the rifle regiments in 22 Luftlande Division, however, was slightly weaker than standard at 3,108 personnel. In many respects the regiment occupied the same position as did the corps higher up the operational chain. Thus, just as a division was the principal tactical unit within an army, so the rifle *battalion* was within an infantry division, and the regimental Stabskompanie performed a similar role to that of the Corps HQ as an administrative and coordinating mechanism. The bandsmen were mainly non-combatants who acted in the field as medical orderlies and stretcher-bearers.

The rifle battalion is the core around which the entire army of any nation is built. It normally fights as an organic whole, although on many occasions its individual companies are assigned specific objectives and operate semi-independently. A German battalion at full strength in 1940-42 comprised 14-16 officers and up to 846 NCOs and ORs compared with 22 officers and 757 other ranks in a normal British battalion. The actual figures for 22 Luftlande Division in May 1940 are 15 officers, 112-30 NCOs and 684-702 ORs for a total of 829 personnel. The reason for the 18-man discrepancy between the figures for NCOs and ORs occurs because there are variations in German records as to

Fig. 3: 16, 47 and 65 Infanterie Regimenter, 10 May 1940



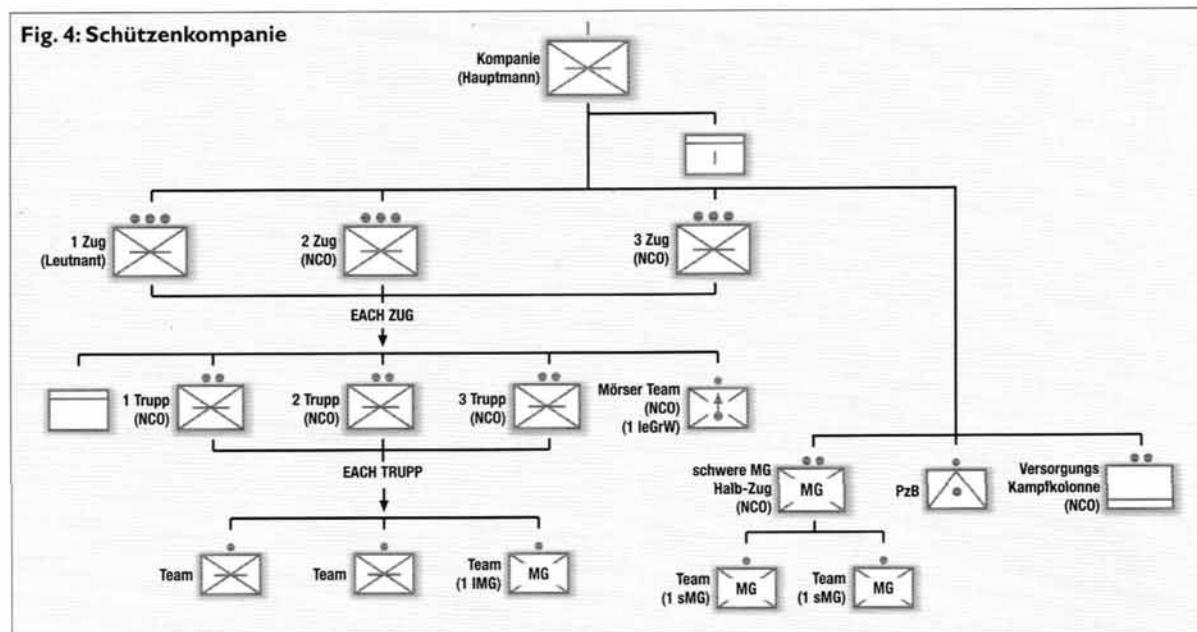


whether a Gefreiter should be classed as a senior private or junior NCO. The total for each of 22 Luftlande Division's battalions is 17 men weaker than was actually standard simply because the airlanding rifle and machine-gun company supply columns did not need drivers or farriers for horse-drawn wagons! Apart from overall size, the outstanding difference between the German and British battalion is the very small German officer to enlisted ratio which was achieved largely as a result of von Seeckt's reforms, with two out of three of the Züge within each Schützenkompanie being commanded by NCOs.

The battalion headquarters was also small. The CO normally held the rank of Major although, as noted earlier, the position could be and often was occupied by a man of higher or lower rank. He was assisted by two adjutants, also commissioned officers, a medical officer and a veterinary officer. The latter was retained in 22 Infanterie Division's battalions even after it acquired the 'Luftlande' suffix because the officers all kept horses for ceremonial occasions and recreation, while the Feldgendarmarie employed dogs. (Von Sponeck actually took his horse with him when he flew into Holland with Infanterie Regiment 65 on 10 May 1940 in anticipation of a victory parade through Den Haag!) The five battalion officers had five NCOs and 22 ORs for staff, acting as orderlies, batmen, clerks, typists and runners. The officers wore automatic pistols and the men had Mauser rifles for defence of the command post if enemy troops got too close. They had no organic automatic weapons at this

Compare this with the photo of the Fallschirmjäger in the Combat Mission section. Here a full platoon of 'line' infantry is assembled with most weapons piled in the foreground.

Fig. 4: Schützenkompanie



Schützenkompanie Typ b (Reich)	Officers	Weapon(s)	NCOs	Weapon(s)	Enlisted	Weapon(s)
Kompanie HQ	Hauptmann	Pistol	1	MP40	10	Rifles
Nr. 1 Schützenzug	Leutnant	Pistol+MP40				
Zug HQ					3	Rifles
Nr. 1 Trupp			1	Rifle	1	MG34+Pistol
					2	Pistols
					8	Rifles
Nr. 2 Trupp			1	Rifle	1	MG34+Pistol
					2	Pistols
					8	Rifles
Nr. 3 Trupp			1	Rifle	1	MG34+Pistol
					2	Pistols
					8	Rifles
Mörser Team			1	leGrW36+Rifle	2	Rifles
Nr. 2 Schützenzug			1	MP40		
Zug HQ					3	Rifles
Nr. 4 Trupp			1	Rifle	1	MG34+Pistol
					2	Pistols
					8	Rifles
Nr. 5 Trupp			1	Rifle	1	MG34+Pistol
					2	Pistols
					8	Rifles
Nr. 6 Trupp			1	Rifle	1	MG34+Pistol
					2	Pistols
					8	Rifles
Mörser Team			1	leGrW36+Rifle	2	Rifles
Nr. 3 Schützenzug			1	MP40		
Zug HQ					3	Rifles
Nr. 7 Trupp			1	Rifle	1	MG34+Pistol
					2	Pistols
					8	Rifles
Nr. 8 Trupp			1	Rifle	1	MG34+Pistol
					2	Pistols
					8	Rifles
Nr. 9 Trupp			1	Rifle	1	MG34+Pistol
					2	Pistols
					8	Rifles
Mörser Team			1	leGrW36+Rifle	2	Rifles
schwere MG Halb-Zug			1	Pistol		
			2	sMG34s+Pistols	4	Pistols
					9	Rifles
Panzerbüchse Trupp			1	Pistol	3	PzB38/39s+Pistols
					3	Rifles

Schützenkompanie (continued)	Officers	Weapon(s)	NCOs	Weapon(s)	Enlisted	Weapon(s)
Versorgungs	2	1 Pistol, 1 Rifle	5	Pistols		
Kampfkolonne			1 (medic)	Pistol	10	Rifles
Rationen					2	Rifles
Gepäck					4	Rifles
TOTALS	2	1 x MP40 2 x Pistol	22	2 x sMG34 3 x leGrW36 3 x MP40 13 x Rifle 6 x Pistol	164	3 x MG34 3 x PzB38/39 125 x Rifle 39 x Pistol

time although one or more machine-gun teams were usually detached from their platoons to help further defend the CP.

Attached to and usually housed either in the same building or tent, or closely adjacent to the HQ, was the communications (Fernmelde) or signals (Nachrichten) Zug. The two terms seem almost interchangeable in German scripts, although the latter is the more common. This platoon comprised four NCOs and 18 men without an officer of its own, but was normally supervised by one of the battalion CO's adjutants, a Leutnant or Oberleutnant. The NCOs had pistols, the ORs rifles. The platoon was divided into two teams, one to man the telephone exchange and the other the radio on a round-the-clock basis. In addition to this, each battalion had its own supply train (Versorgungskolonne) comprising 32 NCOs and men, but a more detailed breakdown of this has eluded research.

The battalion's three Schützenkompanien (Fig. 4) occupied the same position within the battalion itself as it did within the regiment and so on upward through the chain of command. Each rifle company within 22 Luftlande Division comprised its CO, usually a Hauptmann, a Leutnant in command of the first rifle Zug, two senior NCOs in charge of the second and third Züge, 20 other NCOs and 164 ORs, totalling 188 men. (The figures for NCOs and ORs are sometimes given as 28/158 depending on the classification of a Gefreiter.) These statistics differ from those published for some other divisions, which had more officers as platoon commanders and more NCOs to total 190-97 altogether. The accompanying data panel gives a complete breakdown, including the weapon each man was supposedly issued with, but in 22 Luftlande Division there was a higher allocation of MP40s to rifle platoon and squad leaders. However, an exact figure for this is simply impossible to ascertain so the table just gives the standard listing. The total number of MP40s allotted to the whole division was 432 on paper, but may well have been higher.

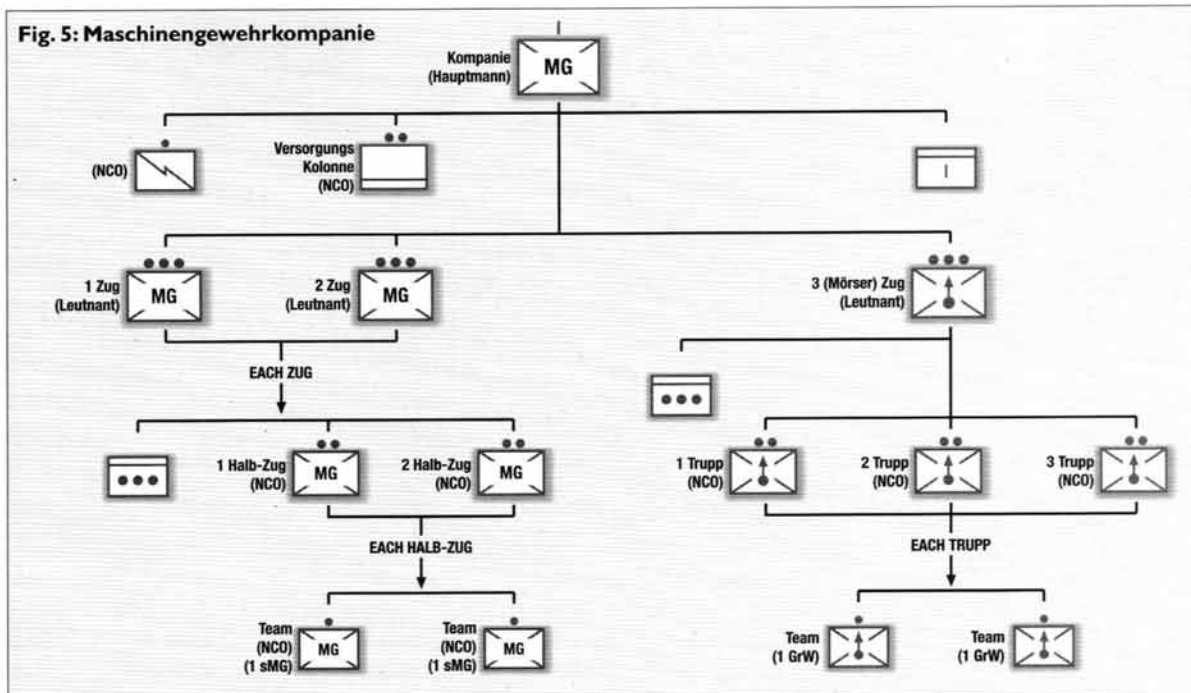
As can be seen, the principal elements of the Schützenkompanie were its small HQ section, which did not even include any telephonists, just a bugler, three rifle platoons, a heavy machine-gun half-platoon (Halb-Zug), an anti-tank rifle section (Panzerbüchse Trupp) and the company supply column (Versorgungs-Kampfkolonne). The latter's personnel included a paramedic NCO, four stretcher-bearers from the band, an armourer, two cooks and a cobbler to repair the men's boots. The remainder of the personnel in the column served as guards and for fetching and carrying tasks.

The fourth principal component in each battalion was its Maschinengewehrkompanie (Fig. 5 and data panel overleaf). The latter term was retained from World War I even though it was now actually a full-fledged support company with a mortar platoon (Mörserzug) and its own signals detachment (Nachrichten-trupp). The NCO in charge of the latter had one man as a deputy and three teams,

Maschinengewehrkompanie Typ b (Reich)	Officers	Weapon(s)	NCOs	Weapon(s)	Enlisted	Weapon(s)	
Kompanie HQ	Hauptmann	Pistol	1	MP40	1	Pistol	
			1	Rifle	6	Rifles	
Nachrichtentrupp			1	Pistol	10	Rifles	
Nr. 1 Zug	Leutnant	Pistol					
Zug HQ			1	MP40	4	Rifles	
Nr. 1 Halb-Zug			2	Pistols	3	Pistols	
					2	sMG34s+Pistols	
					8	Rifles	
Nr. 2 Halb-Zug			1	MP40	3	Pistols	
					2	sMG34s+Pistols	
					8	Rifles	
Nr. 2 Zug	Leutnant	Pistol					
Zug HQ			1	MP40	4	Rifles	
Nr. 3 Halb-Zug			2	Pistols	3	Pistols	
					2	sMG34s+Pistols	
					8	Rifles	
Nr. 4 Halb-Zug			1	MP40	3	Pistols	
					2	sMG34s+Pistols	
					8	Rifles	
Mörserzug	Leutnant	Pistol					
Zug HQ			1	Pistol	3	Rifles	
Nr. 1 Trupp			1	MP40	2	GrW34s+Pistols	
					3	Pistols	
					11	Rifles	
Nr. 2 Trupp			1	MP40	2	GrW34s+Pistols	
					3	Pistols	
					11	Rifles	
Nr. 3 Trupp			1	MP40	2	GrW34s+Pistols	
					3	Pistols	
					11	Rifles	
Versorgungs-Kampfkolonne				41 Pistol,	3	Pistols	
					3 Rifles	2	Rifles
					1 (medic)	Pistol	
Rationen					3	Rifles	
TOTALS	4	4 x Pistol	33	8 x MP40	142	8 x sMG34	
				4 x Rifle		6 x GrW34	
				20 x Pistol		97 x Rifle	
						45 x Pistol	

each of three telephonists. At this time, rifle and MG companies lacked radios. The NCO was armed with a pistol, the other men with rifles. The MG company's supply column was smaller than that in a Schützenkompanie simply because the company itself was numerically weaker at 179 personnel, but included two

Fig. 5: Maschinengewehrkompanie



assistants to the NCO armourer as well as a blacksmith, an NCO medic and one cook. The senior NCO, medic, assistant armourers and smith were armed with pistols, the rest with rifles. A point to note, though, is that the Maschinengewehrkompanie as a whole very rarely acted as a self-contained unit, its machine-gun and mortar teams being parcelled out throughout the battalion as dictated by the tactical situation.

Apart from the above, the most important regimental company in the airlanding role was Nr. 13, the 189-man Pionierkompanie (Fig. 9). Combat engineers should not be confused with the construction engineers (Bau-Pioniere) who felled trees, dug ditches, filled in potholes and generally did all the least 'glamorous' and dirty jobs behind the front line that were, nevertheless, essential to the smooth functioning of the army as a whole. The latter were not divisional troops and their battalions were normally distributed at Armee or Korps level. The combat engineers on the other hand, who were usually divisional troops, were amongst the toughest and most highly skilled soldiers in the army and were selected from recruits who had been, for example, mechanics or electricians in civilian life. As a rule of thumb, they were better educated than the average rifleman, who had probably been a farm, factory or shop worker. In addition, the

A gunner with an MG34 on its LMG bipod but with an ammunition belt instead of saddle-drum magazine (see Weapons and Equipment). The leather tube on his back carries a spare barrel.



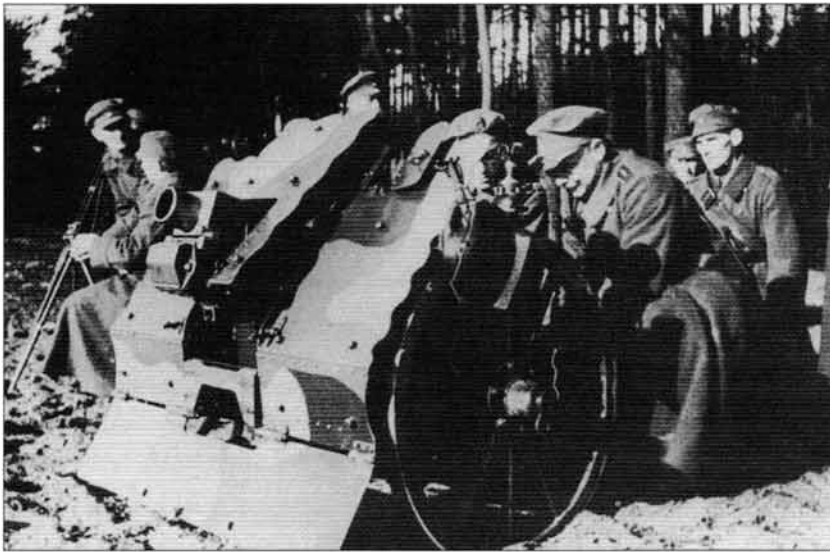
Pioniere were usually a couple of years older and within the army itself had received further technical training. All this contributed to the combat engineers considering themselves something of a notch above the rest and they were frequently given the most dangerous tasks in the forefront of assaults. Further details are given in the section headed 22 Pionier-Bataillon below but before returning to this we should look at the artillery, including the two support companies (Nr. 14 and 15) within the infantry regiments.

Mention must be made first of 22 Feldersatz-Bataillon. Each infantry division included one of these 'field replacement' battalions. They are sometimes referred to as 'reserve' battalions, but they were not originally intended as proper reserves capable of being committed to battle as organic wholes. Some were later redesignated Fusilier-Bataillone because being called 'replacements' did nothing for the men's morale and they *were* committed to combat in their entirety, sometimes achieving astonishing results because of a determination to prove themselves. Allied accounts as late as 1944 occasionally refer to them as 'reconnaissance' battalions, which was inaccurate although the mistake is understandable because some Aufklärungs-Abteilungen were also renamed Fusiliere. The Ersatz-Bataillon comprised infantrymen who were essentially raw, even though they had all gone through 'basic', and were therefore in the early, triumphant, days, given a back seat alongside the divisional trains. Their function was like a funnel from the Wehrkreise to supply a manpower reserve to replace casualties in the front-line battalions. The battalion just had three rifle companies and no machine-gun company, to total 650 officers and men. Organisation of the Schützenkompanien was identical to that of a standard rifle company but all three of their Züge were commanded by officers instead of NCOs, who were responsible for raising the level of the men's training.

22 Artillerie-Regiment and Nr. 14 Infanteriegeschützkompanien

As already noted, in 1939-42 the artillery regiment was still horse-drawn and its 10.5 and 15cm leFH18 and sFH18 gun-howitzers together with their ammunition caissons and draught animals could not possibly be transported by aircraft, so it played no part in the airlanding operations of 1940. The following is therefore a sketch pending fuller treatment in a separate volume on infantry divisions of the blitzkrieg era. The artillery regiment comprised 2,700 men, 48 guns, 2,211 horses and 226 wagons divided principally into one heavy and three light battalions (Fig. 6) plus the Stabskompanie, the Nachrichtenzug and the motorised Wetterungstrupp, or weather reconnaissance section. An officer who was a qualified meteorologist commanded the latter and its equipment included instruments for measuring wind speed and direction, air humidity and pressure, temperature and other factors that could affect ranging the regiment's guns when firing indirectly at unseen targets perhaps several kilometres away. Humidity, in particular, could affect the propellant charges in the guns, which varied in weight depending on whether the weapon was being fired on a flat or high trajectory. This deliberately built-in flexibility necessitated obvious adjustments to their elevation for a given range. The meteorological section was therefore very important to the regiment even though weather changes, as today, can be completely unpredictable.

The core of the regiment was its four battalions of guns, I-IV/22 Artillerie-Bataillone plus, in this case, I/158 Bataillon. Each battalion, heavy or light, comprised an HQ company, signals section, observation company (Beobachtungskompanie) and ammunition company (Munitionskompanie). The observation company used wide-angle stereoscopic scissors telescopes to watch and correct the fall of shot, and operated cooperatively with the Luftwaffe liaison officer attached to the divisional staff who would deploy his spotter 'planes in accordance with the company commander's wishes. A battalion's 12 guns were sub-divided into three batteries of four, with each battery itself being further broken down into two 'firing batteries' (Abfeuren-Batterien) with two guns apiece. Each battery had a small HQ section, a telephone squad to



A 7.5cm leIG18 and Infanteriegeschütz crew during manoeuvres in 1936. The weapon was small enough to be carried in a Ju 52.

respond to requests for indirect fire, and ammunition, rations and baggage sections. As with the Maschinengewehrkompanien, a point to note about the artillery regiment is that its guns were only rarely used collectively to provide an intense barrage on one point in the line, as was normal British practice. Instead, the batteries were more usually parcelled out to provide support for the individual rifle battalions. 'Heavier metal' was supplied by artillery brigades and, later, entire corps coordinated at Armee or even Armeegruppe level.

Completely separate from the division's artillery regiment were the Infanteriegeschützkompanien (in each case Nr. 14) within the three rifle regiments. Each of these comprised four Abfeuren-Batterien, one with two 15cm sIG33s and three with 7.5cm leIG18s. Of these, only the latter were remotely air-portable and a handful were certainly airlifted in to Infanterie Regiment 16 at Waalhaven in 1940. None of the artillery was deployed on Crete in May 1941 because by this time 22 Luftlande Division itself had been relegated to static duties protecting the Ploesti oilfields in Romania against the possibility of a Soviet attempt to seize them via an attack from Bessarabia. To von Sponeck's disappointment, as well as that of Kurt Student, the commander of Zwölfter (12th) Armee, Feldmarschall Wilhelm List, refused to allow the division's redeployment because of the time that it would take with the countdown for the start of Operation Barbarossa so close. In its place, XI Fliegerkorps was grudgingly allowed temporary use of Generalmajor Julius Ringel's 5 Gebirgs Division, which was already in southern Greece (Fig. 23).

22 Panzerabwehr-Abteilung and Nr. 15 Panzerabwehrkompanien

The division's anti-tank battalion (Fig. 7) comprised 599 men broken down into a Stabs-Zug, Nachrichtentrupp, Beobachtungs-Zug and Munitionskolonne, plus three companies of anti-tank guns and the attached Nr. 46 schwere Flak-Maschinengewehrkompanie. The last-named, as explained in the C3I section, was a Luftwaffe unit and at this stage of the war provided the sole anti-aircraft defence for the whole division. All it comprised was a dozen 20mm Flak38 quick-firing guns divided into three batteries of four, then again into firing batteries of two. The guns were towed behind light trucks and were not used in the airlanding role.

Each of the battalion's Panzerabwehrkompanien similarly comprised 12 3.7cm PaK36s sub-divided into three batteries and then again into pairs. Each company also included a signals team, ammunition platoon and rations and baggage sections. Nr. 15 Kompanie within each of the division's three

Fig. 6: 22 Artillerie Regiment

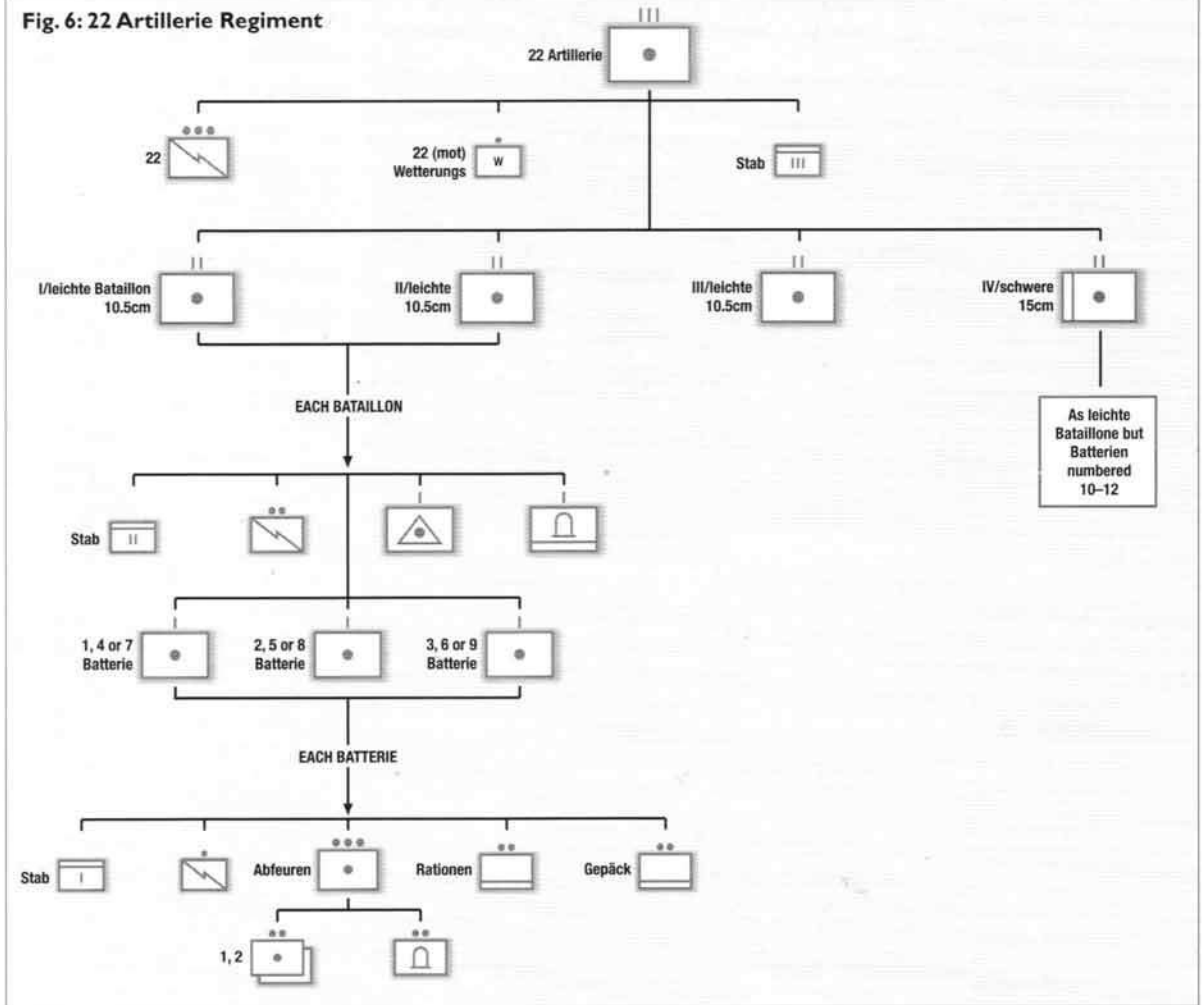
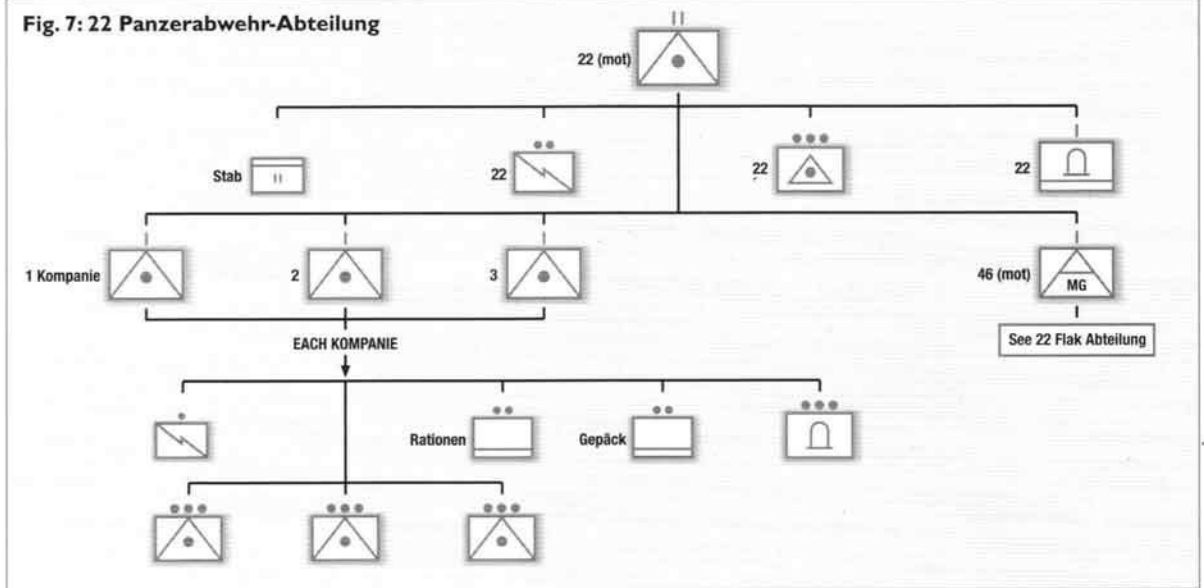


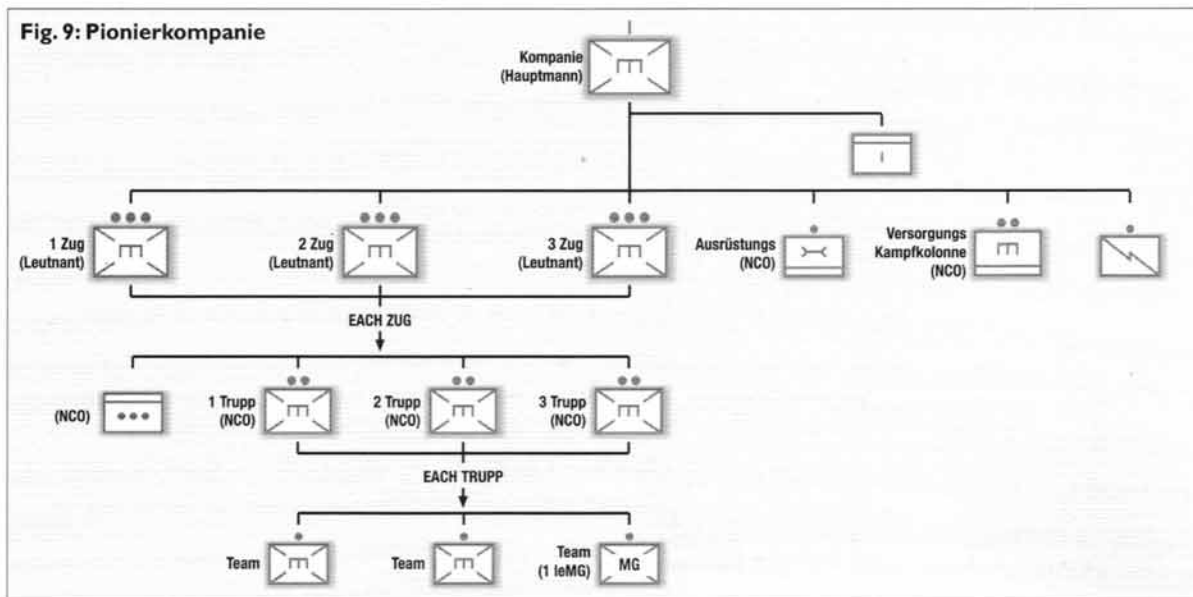
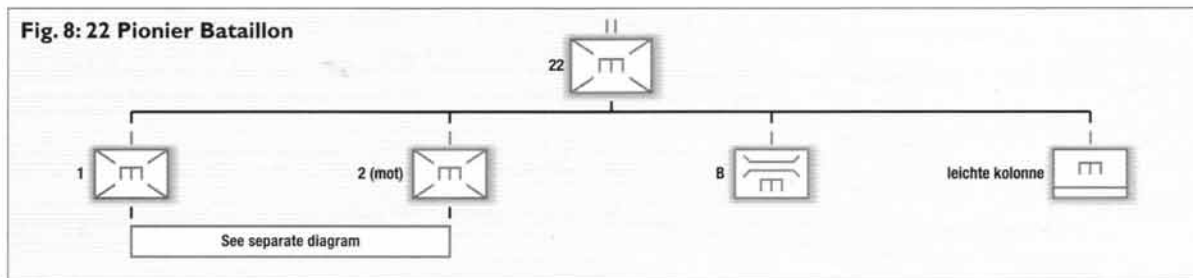
Fig. 7: 22 Panzerabwehr-Abteilung



infantry regiments was exactly the same composition. Again, the guns were towed behind light trucks and were not used in the airlanding role. An interesting point to note is that during the winter of 1940-41 all Panzerabwehr companies and battalions were redesignated Panzerjäger ('tank hunter') to suggest psychologically a more aggressive, offensive rather than defensive role; later in the war the American army renamed all its anti-tank units, whether towed or self-propelled, 'tank destroyer' for the same reason.

22 Pionier-Bataillon and Nr. 13 Pionierkompanien

The importance the Germans attached to their combat engineers can be seen clearly through the fact that each infantry division included at least five, sometimes six, Pionierkompanien that were themselves slightly stronger numerically than the Schützenkompanien (see above). The engineers also had a higher allocation of automatic weapons. 22 Luftlande Division's battalion (Fig. 8) only had two companies, of which the second was motorised and not converted to the airlanding role. However, there were also the other three unmotorised companies (in each case Nr. 13) within the airlanding rifle regiments. 22 Pionier Bataillon itself, 800 men strong, also included a bridging column (Brückenkolonnen) and a light supply column (leichte Pionierversorgungskolonnen) whose wagons were packed with ropes, wires, cables, coils of barbed wire, wire cutters, pegs, sledgehammers and mallets, crowbars, spanners, pickaxes, axes and shovels and possibly a proverbial kitchen sink. To that list must be added explosives, fuses and electrical detonators for demolition work and use against enemy pillboxes, as well as mines, both anti-tank and anti-personnel, and



electrical mine detectors. Although the men of the rifle companies were trained in both mine-laying and their detection and removal, it was one of the combat engineer specialties. Nr. 1./22 and Nr. 13./16, /47 and /65 Pionierkompanien, the airlanding components (Fig. 9 and accompanying data panel), obviously carried some of this equipment but it was limited in scale because of both tactical and logistic considerations, bearing in mind the men's role and the capacity of the Ju 52.

Pionierkompanie	Officers	Weapon(s)	NCOs	Weapons	Enlisted	Weapons
Kompanie HQ	Hauptmann	Pistol	2	1 MP40,		
			2	Pistols	4	Rifles
Ausrüstungs-Zug			2	Rifles	12	Rifles
Nr. 1 Pionierzug	Leutnant	MP40+Pistol				
Zug HQ			1	MP40	8	Rifles†
Nr. 1 Trupp			1*	MP40	1	MG34+Pistol
					12	Rifles
Nr. 2 Trupp			1*	MP40	1	MG34+Pistol
					12	Rifles
Nr. 3 Trupp			1*	MP40	1	MG34+Pistol
					12	Rifles
Nr. 2 Pionierzug	Leutnant	MP40+Pistol				
Zug HQ			1	MP40	8	Rifles†
Nr. 4 Trupp			1*	MP40	1	MG34+Pistol
					12	Rifles
Nr. 5 Trupp			1*	MP40	1	MG34+Pistol
					12	Rifles
Nr. 6 Trupp			1*	MP40	1	MG34+Pistol
					12	Rifles
Nr. 3 Pionierzug	Leutnant	MP40+Pistol				
Zug HQ			1	MP40	8	Rifles†
Nr. 7 Trupp			1*	MP40	1	MG34+Pistol
					12	Rifles
Nr. 8 Trupp			1*	MP40	1	MG34+Pistol
					12	Rifles
Nr. 9 Trupp			1*	MP40	1	MG34+Pistol
					12	Rifles
Versorgungs-Kampfkolonne			1 (medic)	Pistol	1	Pistol
					3	Rifles
Rationen					3	Rifles
Gepäck					4	Rifles
TOTALS	4	3 x MP40 4 x Pistol	17	13 x MP40 2 x Rifle 2 x Pistol	168	9 x MG34 158 x Rifle 10 x Pistol

*Often a Gefreiter ~ see text.

†Depending on the nature of the mission, one or more flamethrowers were held by each platoon HQ for issue to a volunteer – see Weapons and Equipment.

Each combat engineer company comprised a tiny nine-man HQ section, a 14-man equipment 'platoon' (Ausrüstungs-Zug), three 51-strong engineer platoons (Pionier-Züge) and a weak 12-man battle supply column (Versorgungs-Kampfkolonne). A Hauptmann commanded the company and his 'staff' included two NCOs, a groom for his horse, two messengers and a driver. The equipment platoon, sometimes shown as 'Waffen-und-Gerät' instead of 'Ausrüstungs', had an NCO as 'foreman', a second NCO and assistant as mechanics, two telephonists and nine non-specialists, at least three of whom would, however, have been qualified motor vehicle drivers. The supply column only had a single NCO who was also the company medic, a stretcher-bearer corpsman to assist him, two cooks, a tailor and a cobbler, the other men acting as general assistants.

Each of the three combat platoons had a Leutnant in charge backed up by an NCO deputy and eight other men in his HQ section, one of whom had been a surveyor in civilian life and/or trained after induction into the army. In the table, I have shown each of the combat engineer sections as being commanded by a Gefreiter, but he may have held a rank one step up or down depending on his CO's evaluation of his ability. The battalion supply column held 'in stock' 12 flamethrowers (which were maintained by the equipment platoon), enough for one to be issued to each front-line platoon depending on circumstances. On occasion, these were distributed to the rifle and support companies. The combat engineer platoons had a higher proportion of NCOs, including Gefreiter, than in a rifle company, and a greater allocation of MP40s to supplement their three MG34s. During the spring of 1941 prior to being sent to Russia, a third company was added to 22 Pionier-Bataillon, its equipment being horse-drawn in wagons.

The battalion also included a motorised bridging column (Brückenkolonne) that was obviously not deployed in the airlanding role. It had two Brückengerät B bridges that used a flatbed structure on undecked steel pontoons to support a weight of over 20 tonnes – in other words, anything up to a PzKpfw IV tank. Additionally, the column carried six large and 12 small inflatable rubber dinghies that could be used by the combat companies for cross-river assaults, as by 51 Pionier-Bataillon across the Albert Canal on the morning of 11 May 1940. The larger boats could also be roped together with an overlay of wooden planks to form a temporary bridge for infantry and light vehicles.

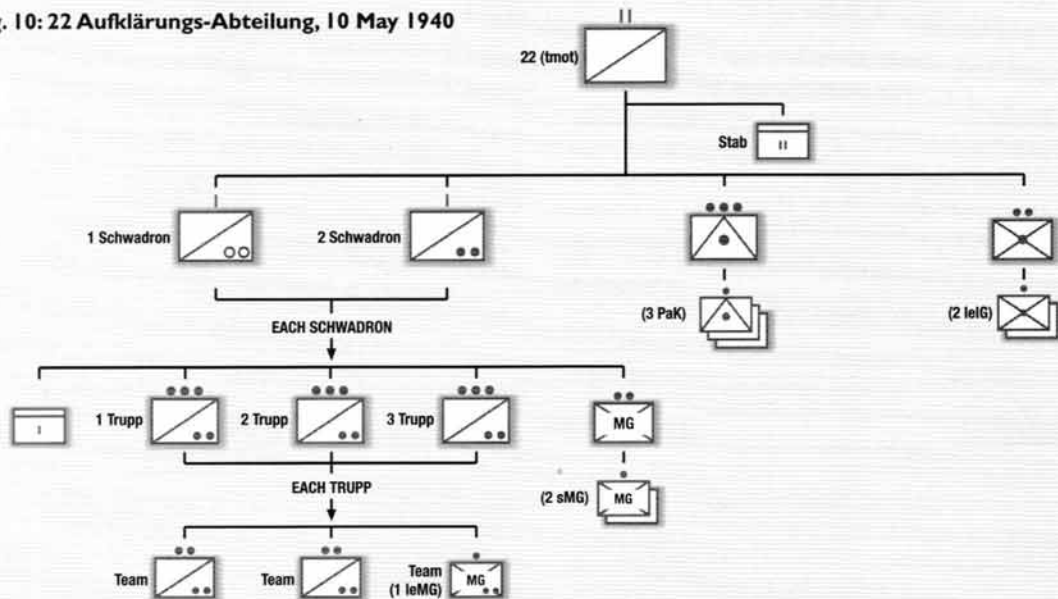
22 Aufklärungs-Abteilung

The division's recce battalion (Fig. 10) was not deployed in the airlanding role due to the simple fact that the Fallschirmjäger were expected to have performed this task during their initial assault. At the beginning of the war one of the battalion's two squadrons rode horses in centuries-old light cavalry style; these were retained in many divisions beyond 1941 and, in fact, horses were still used singly or by small patrols under the right circumstances to the end of the conflict. In 22 Luftlande Division by May 1940, however, the horses had been replaced by motorcycles in Nr. 2 Schwadron, while the men in Nr. 1 rode bicycles. Neither type of transport was a combat vehicle of course, but the 575-man Aufklärungs-Abteilung was not expected to engage in combat longer than necessary for self-preservation; its duty was to observe and survive to report. Nevertheless, when thinly spread across a divisional front like the 'skirmishers' of earlier years, the battalion's men could find themselves in sticky situations so, in addition to the



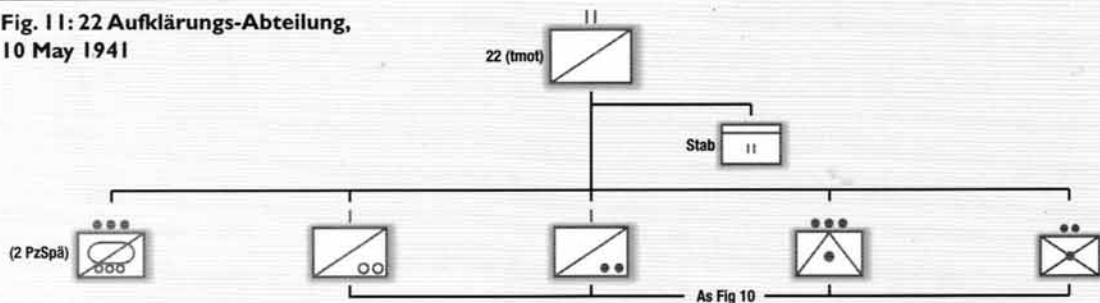
Combat engineers, actually from 51 Pionier-Bataillon, leap from their assault craft to the relief of Gruppe 'Granit' at Eben Emael on 11 May 1940.

Fig. 10: 22 Aufklärungs-Abteilung, 10 May 1940



Note: Only Nr. 2 Schwadron detailed. Nr. 1 Schwadron identical composition but equipped with bicycles instead of motorcycles.

Fig. 11: 22 Aufklärungs-Abteilung, 10 May 1941

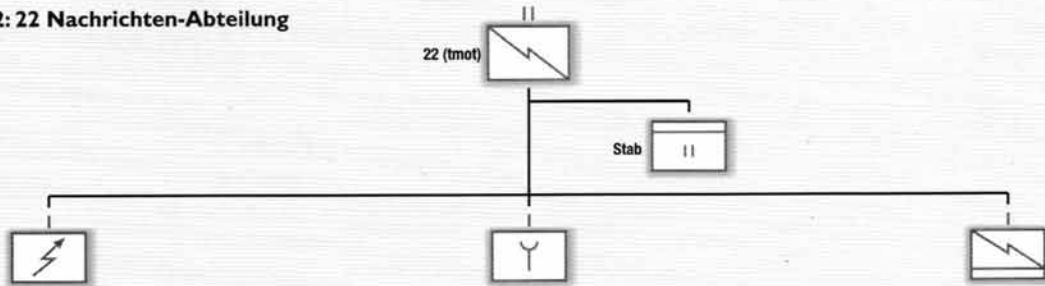


two heavy and nine light MG34s allocated to each squadron, the battalion could provide quick backup in the form of three 3.7cm PaK36s in its motorised Panzerabwehrzug and two 7.5cm leIG18s in its Infanteriegeschütztrupp. The battalion as originally constituted in 1939 was classed as a skirmish reconnaissance (Gefechts-Aufklärung) unit for relatively close-range work. When it received motorcycles and, during the winter of 1940–41, a pair of armoured cars in a new platoon (Panzer-Spähwagen-Zug), it was upgraded to a tactical reconnaissance (Taktische-Aufklärung) formation with the duty of patrolling anything up to 15 or 20 miles in front (Fig. 11). The armoured car platoon was later expanded to a full company on Crete, and the recce companies themselves increased from two to four, one with Kubelwagens and the other three equipped with motorcycles.

22 Nachrichten-Abteilung

The division's small 474-man signals battalion (Fig. 12) was commanded by a Major and very simply divided into an HQ section, a radio company (Funk-Kompanie), telephone company (Fernsprech-Kompanie) and signals supply column (Nachrichten-Versorgungskolonne). All were predominantly motorised with the radio sections each to its own truck or half-track, the telephonists similarly with mobile exchanges and the supply column with miles of cable and

Fig. 12: 22 Nachrichten-Abteilung



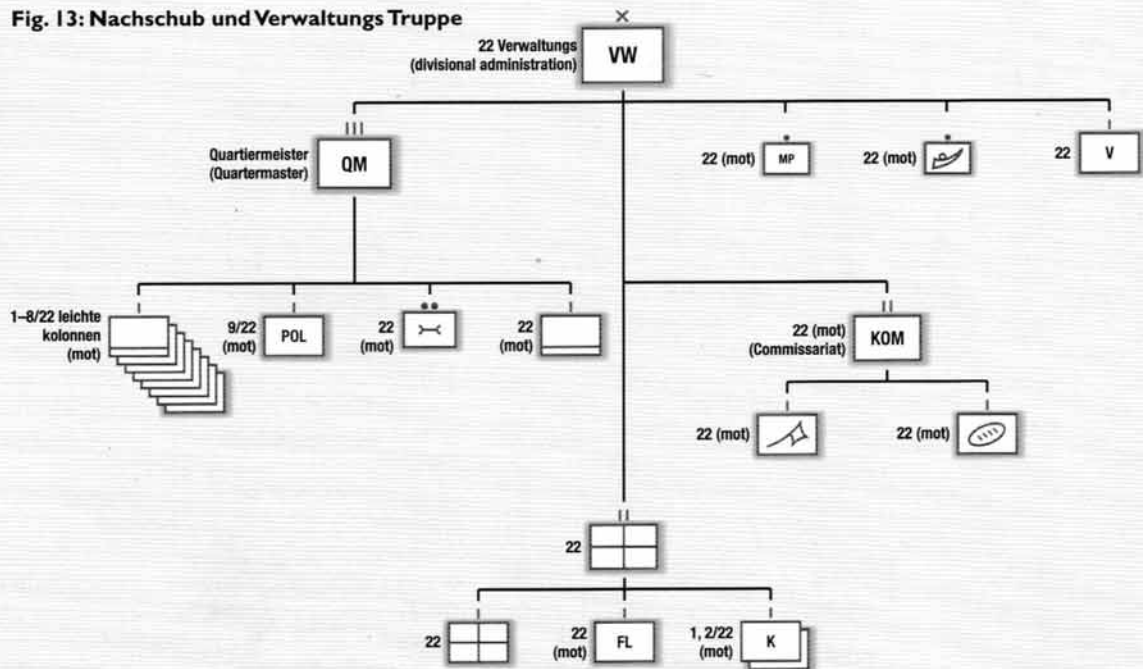
For dissemination below company level see accompanying text and section on Communications

cases of replacement valves, as well as the usual cooks, cobblers, tailors, medics, stretcher-bearers and labourers. In Holland in 1940 the battalion supplied extra personnel as backup for the three infantry regiments' own signals platoons. Each of the communications companies was commanded by a Hauptmann and then sub-divided into three platoons, each led by a Leutnant. Following the normal German 'modular' system, further sub-division was similar to that within a rifle battalion's Nachrichten-Zug although each platoon was responsible for either radio or telephone communications, not both. One of its four NCOs was the platoon's deputy commander and perfectly capable of taking over if the officer was wounded, while the other three each ran a six-man section who functioned on a four hours on, four hours off, basis around the clock. As usual, the officers wore pistols and the rest of the personnel carried rifles, but between those men allocated to the airlanding role there may have been a sprinkling of MP40s.

Divisional trains

Just as the divisional staff was divided into three sections (see table in C31), so the often neglected but vital transport, supply and medical services operated in three administrative 'departments' (Fig. 13). The collective German phrase for

Fig. 13: Nachschub und Verwaltungs Truppe



these is Nachschub und Verwaltungs Truppe – Supply and Administration Troops. Overall command of the 2,200 men in the trains was usually vested in an Oberst or Oberstleutnant, the divisional Ib. Most elements in 22 Luftlande Division's trains were motorised even in 1940, so it had a surprisingly low number of horses, just 218 to haul 30 wagons, alongside 325 trucks and cars. The military police (Feldgendarmerie) and field post (Feldpost) sections used motorcycles.

The divisional trains were principally responsible for feeding the men, keeping them healthy and supplying them with ammunition. Right at the top of the 'food chain' were the Wehrkreise and Luftgaue, each of which had responsibility for the men recruited in their regions. They obviously needed fast and efficient transport systems so, although Hitler's construction of autobahns and modernisation of the railways were publicised as civil engineering feats symbolic of the 'reborn' Germany, they were in fact designed first and foremost for military use. Germany in the 1930s was surrounded by past and potential future enemies but had the advantage of interior lines of communication, and the dictator was determined that his armies would not again suffer the deprivations he had personally experienced in the trenches of World War I. Hence railways that ran on time, to the great envy of the British public, and roads which ran straight as arrows rather than twisting tortuously around every farm.

From the Wehrkreise and Luftgaue, supplies therefore moved swiftly to the Armeen and Luftflotten depots and railheads, whence they were downloaded to the Divisionen and Geschwader, almost completely bypassing the Korps level. From divisional railheads and depots, the stores were reloaded into the trucks or horse-drawn wagons of the divisional supply columns, which were administered by the Quartiermeister. In 22 Luftlande Division there were eight motorised leichte Kraftwagen-Kolonnen (1-8/22) each with a 30-tonne capacity, plus a

ninth Kolonne für Betriebsstoff (9/22), or MT fuel column with a capacity of 25,000 litres (5,500 gallons). The Quartermaster's command also included the maintenance platoon (22 Aufrechterhaltungszug) that supervised the division's field workshops, and the supply company (22 Versorgungskompanie) whose personnel provided the muscle for further downloading stores to the individual regimental and battalion supply companies (Nachschubkompanien), and thence on to the company supply sections described earlier. It was a system that worked very efficiently until after the invasion of Russia when the supply lines simply became too long, as Napoleon could have warned. Supplies to 22 Luftlande Division's airlanding components were obviously ferried in Ju 52s rather than trucks, but the principle was identical.

The commissary detachment (KommissariatAbteilung) was also controlled by the divisional Ib but was separated administratively from the supply columns. It consisted of a butcher's company (Fleischereikompanie) and bakery company (Bäckereikompanie). The former was responsible for chopping up the animal carcasses delivered in refrigerated trucks by one of the supply columns and redistributing the meat to the

Weariness is written all over this soldier of a supply train struggling through to Infanterie Regiment 16 in Poland in 1939. He wears a Zeltbahn cape against the inclement weather.



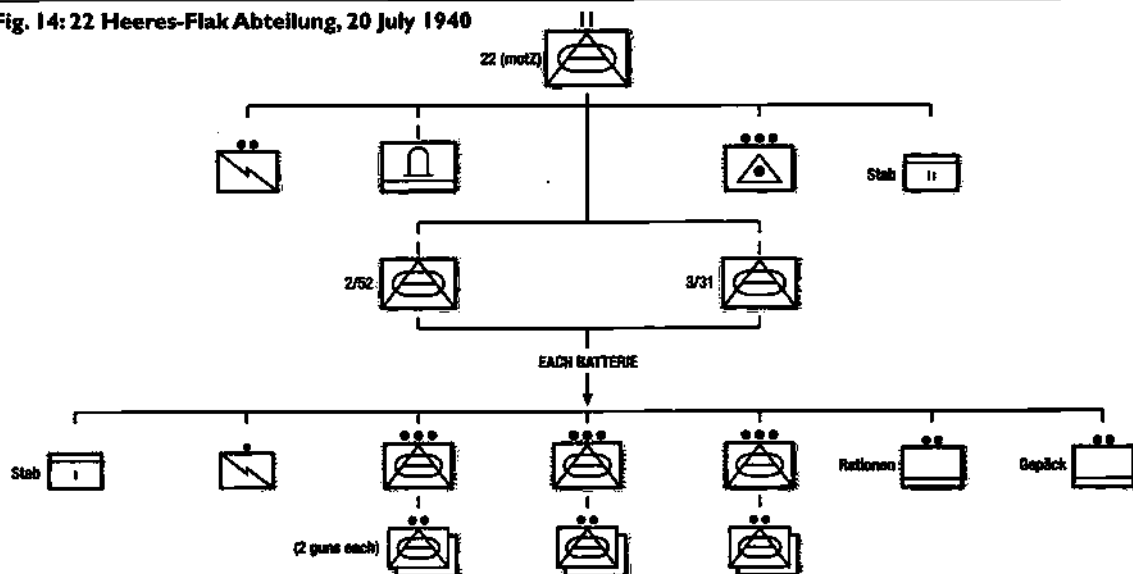
individual field kitchens. On campaign, the company butchers also slaughtered animals purchased or 'acquired' locally. Strictly speaking, looting was an offence but there were usually plenty of cows, sheep and pigs that had been killed accidentally. The bakers similarly took the flour offloaded from the supply columns and prepared thousands of loaves daily. Again, on campaign they would make use of local suppliers or take advantage of stores abandoned by retreating enemy forces. Each man in the army was entitled to a loaf of bread a day, plus a small pot of margarine, and carried a bread bag (Brotbeutel) to keep them in.

The last components in the divisional trains were the medical battalion (Sanitäts-Abteilung) and veterinary company (Veterinärkompanie). The former came under the administration of the divisional IVb and the latter the IVc. The veterinary company had no airlanding role, of course, neither did the field hospital (Feldlazarette) or two ambulance companies (1 and 2/22 Krankenwagenkompanien) that were all motorised. The only personnel who were trained for this task were the doctors, paramedics and stretcher bearers of 22 Sanitätskompanie whom a secondary source numbers at 122 men, a figure I have so far been unable to verify or break down further. The medical battalion was commanded by a surgeon with the rank of Stabsfeldarzt, or field staff doctor, while the field company was commanded by an Oberleutnant although medical treatment was supervised by the Oberarzt, or senior doctor, who had probably been a general practitioner in civilian life. Sometimes he had an Assistenzarzt or junior doctor still under training who was nevertheless expected to be capable of taking over if necessary.

22 Heeres-Flak-Abteilung

Mention of this must be made for completeness even though it took no part in the division's airlanding operations, only coming into existence in July 1940 (Fig. 14). It has the distinction of being the army's first anti-aircraft battalion not manned by Luftwaffe personnel. The earlier Nr. 46 schwere Flak-Maschinengewehrkompanie was re-assigned by the Luftwaffe and its 20mm Flak38s were replaced by self-propelled 3.7cm guns on half-tracks in 2/52 and 3/31 Flak-Batterien, each with 12 weapons further sub-divided in normal artillery fashion into fours and pairs. The battalion included its own signals section, ammunition column and observation platoon.

Fig. 14: 22 Heeres-Flak Abteilung, 20 July 1940



Note: Nr.46 Flak-MG Batterie (see 22 Panzerabwehr Abteilung) was of identical composition to the above but had towed instead of self-propelled guns.

Postscript

To round off the story of 22 Luftlande Division, it was never employed in the airlanding role after May 1940. In June, after regrouping from the operations in Holland, it helped in the invasion of France, fighting its way from Dinant to St Quentin. Next, following the Russian occupation of Bessarabia in the same month and the abortive Italian invasion of Greece in October, it was assigned to safeguarding the Romanian oilfields that were so vital to the German war economy. The division then moved into Russia as part of Armeegruppe Süd and fought with distinction at Sevastopol. In July 1942 it was reorganised as a motorised division, renamed 'Tropisch' and sent to Crete (with III/IR47 detached to Tobruk). Feldmarschall Erich von Manstein later complained that, 'although one of our best formations, it was to lie more or less idle for the rest of the war'. Despite pleas from Rommel too, it remained on Crete until 1944. Elements of the division did take part in a few amphibious assaults against small British-held islands in the Aegean during this period and, although these operations were of no strategic importance, the British took the almost unprecedented step of sending a party of commandos to Crete in April 1944 to kidnap the division's then commander, Generalleutnant Heinrich Kreipe. This episode is vividly recreated in the book and film *Ill Met By Moonlight*. Later in the year, under its final CO, Generalleutnant Helmut Friebe, the division was posted to Yugoslavia to help in the battle against Tito's partisans. The survivors of the once proud formation surrendered near Sarajevo in May 1945.

DFS 230 – the first 'Stealth' aircraft

Although, as we have seen, the Treaty of Versailles abolished the old Imperial German Flying Corps, prohibited development of new military aircraft and placed severe restrictions on civilian types, it said nothing about gliders. If they thought about it at all, the victorious Allies regarded gliding purely as a sport with no military applications. They were oblivious to the fact that gliders could be used both to train potential pilots for a resurrected air force and as weapons. The Germans, although disillusioned and impoverished by the treaty's odious reparations, were a great deal more wide awake. Moreover, within a sports-oriented culture in a struggling economy, gliders were relatively cheap to build and

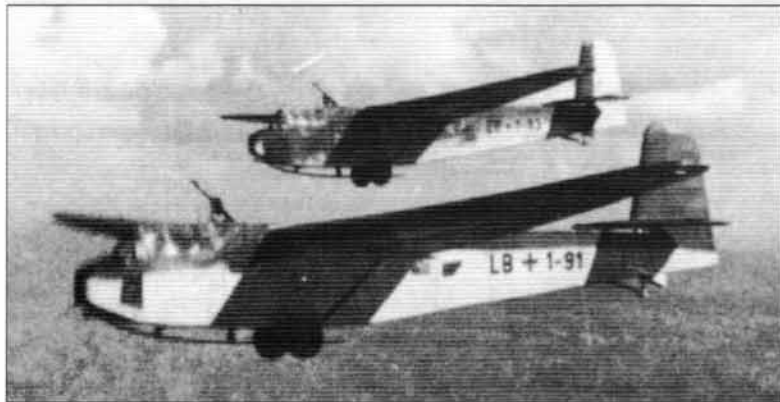
operate, so a profusion of gliding clubs began springing up.

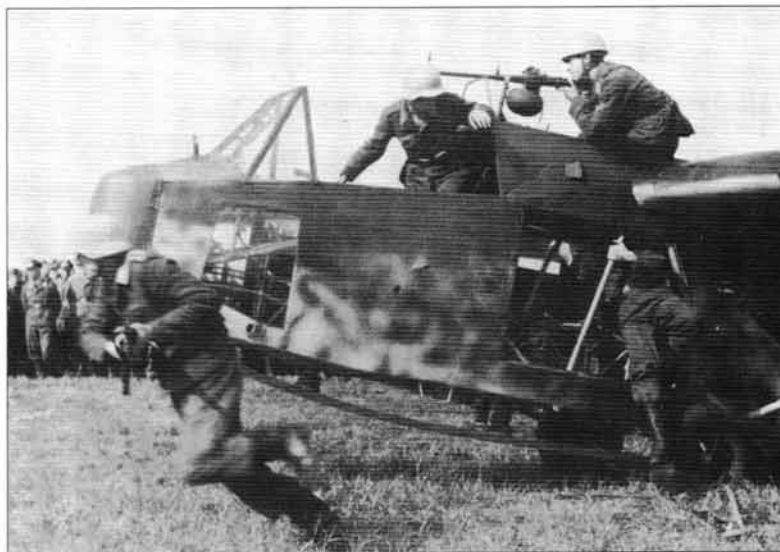
Between 1921 and 1923 these clubs were integrated into the Deutsche Luftsportverband (DLV) and the gliding courses initially put under the overall direction of the then Hauptmann Kurt Student. Later, after Hitler became Chancellor, it was renamed National-Sozialistisches Fliegerkorps (NSFK) and, then commanded by Oberst Bruno Lörzer, assumed responsibility for training volunteers from the Hitlerjugend.

In the meantime, progress in the development of new gliders with military potential themselves had been steady, one of the keenest advocates alongside Student being Generalmajor Ernst Udet, highest-scoring German 'ace' of World

War I. He encouraged work on high aspect ratio wing gliders for meteorological research then being conducted by Rhön-Rossitten Gesellschaft, which company was absorbed by the Deutsches Forschungsinstitut für Segelflug (DFS) in 1933. Following Hitler's election to power in the same year, Udet called for further research into gliders with sufficiently spacious fuselages and load-bearing capability to be used as cargo aircraft (Lastensegler), which could be landed on the most primitive airstrips or even just a relatively flat cabbage patch. Work proceeded slowly to begin with but accelerated when Albert Kesselring moved from his army position to become chief of staff in the RLM in 1936 after Walter Wever's death in a 'plane crash. One of his first acts – after taking flying lessons at the age of 48! – was to appoint Udet to reorganise the new Luftwaffe's Technische Amt, whose Erprobungsstelle für Fluggerät had been run since August the previous year by Kurt Student, newly promoted to Oberst.

LEFT A pair of DFS 230s detached from their towing aircraft during their descent to an airfield in Greece prior to the invasion of Crete. Both have their two-wheel dollies attached so they are hoping for a smooth landing. Note different camouflage patterns.





Udet was highly impressed by a demonstration of one of the three DFS 230 prototypes at Darmstadt-Griesheim and in 1937 he and Student arranged a further demonstration for other high-ranking air force and army officers, including Kesselring and Milch. The glider was flown on this occasion by none other than Flugkapitän Hanna Reitsch. Casting off from her Ju 52 tug at 1,000m, she skilfully landed the aircraft practically at the feet of the assembled dignitaries, whereupon eight fully armed soldiers leapt out through its port side door to a round of applause.

From this point on the DFS 230's future was assured and production of the '230A-1 was placed with Gothaer Waggonfabrik, which built 1,022 of the gliders between 1938 and 1941, some with dual controls for training (A-2s), some with a braking parachute (B-1s) and others – C-1s like those used in the rescue of Mussolini from Gran Sasso in September 1943 – with retro rockets for extremely short landings. Most were unarmed but those used in the airlanding assault role were fitted with a 7.92mm MG15 machine gun.

In appearance, the DFS 230 was a very simple aircraft, but in fact it was highly sophisticated and its design, by Hans Jacobs, had a great influence on the later development of British and American military gliders. The box-like fabric-covered fuselage was built around a lattice of light steel tubes while the long, tapered shoulder wing was mainly of plywood supported either side by light steel struts, the unladen weight being a mere 860kg. It was a small aircraft – span 20.87m, length 11.24m and height to top

of tail fin 2.74m. It had no fixed undercarriage apart from a landing skid, although take-off was eased by use of a two-wheel dolly that could be jettisoned during an assault mission against an unprepared LZ, or left in place for a conventional landing on a regular runway.

The advantages of gliders over parachutes are discussed further in the section on tactics, but one is obvious: the occupants could carry their weapons ready for instant use and they did not have to search for either weapons containers or their squad mates as their first tasks after landing. A DFS 230's interior was cramped but could carry the pilot and eight or nine other Fallschirmjäger with all their carbines or sub-machine guns, 3,000 rounds of ammunition and further kit up to a maximum laden weight of 2,100kg. Alternatives included four riflemen plus a three-man MG34 team with 2,200 rounds; seven riflemen including three signallers with a field radio; four riflemen plus a 5cm mortar with three-man crew; or three riflemen plus an 8.1cm mortar and four-man crew, each mortar team having ten boxes of bombs.

To be an airlanding trooper in a DFS 230 required a special type of courage and lack of introspective imagination, not just because they were always going to be the first into action but because they were completely helpless against enemy fighter aircraft and could not even bale out, as could their opposite numbers in a Ju 52. On top of this, the fabric-covered fuselage and plywood deck gave no protection against enemy small arms fire, let alone flak. Nor did the glider's speed offer much solace. It could be

LEFT During a demonstration Jäger debouch from a DFS 230 while one mans the MG15. Interestingly, two are wearing conventional Stahlhelme.

towed, usually by a Ju 52 but on occasion by an He 111 or even a Ju 87, at an optimum 210km/h. Once unhooked, it could dive safely at 290km/h, but when coming in to land this had to be reduced to 60–70km/h to prevent the relatively fragile machine breaking up and spilling its dazed and injured occupants all over the landscape. Before the introduction of braking parachutes and retro rockets, barbed wire was sometimes coiled around the landing skid to help slow the gliders down on the ground.

The only consolation the Fallschirmjäger had was that their approach against an unsuspecting enemy was almost certain to remain undetected until seconds before their touchdown. Under normal conditions the gliders would be released from their tugs at a height of around 1,500m some 20–25km from their target. This low altitude and their small size coupled to slow speed made them difficult for enemy fighter pilots to detect. Similarly, the DFS 230's frontal profile was diminutive and, especially when its approach was made out of the sun, the most keen-eyed sentries had difficulty in spotting it. It was totally silent apart from the swish of air, so the most sensitive sound locators failed to pick it up. Nor was the primitive radar of the time much use because the aircraft's mostly non-metallic construction gave it much the same reflection as a small flock of birds. The Luftlandtruppe thus added stealth to the other key ingredients of their success, surprise and speed.

The DFS 230 was first used operationally by Sturmabteilung 'Koch' in May 1940 when 42 aircraft were deployed; then in April 1941 by FJR 2 at Korinthos when six machines spearheaded the parachute attack, and finally the month afterwards on Crete when 66 out of an available 69 gliders carried Koch's I/LLStR in the assault. These small numbers out of the total built had a completely disproportionate effect on three crucial campaigns of the blitzkrieg era but, apart from a later couple of tiny Fallschirmjäger operations, the remainder of the production-run aircraft were used by Schleppgruppen 1, 2 and 3 as cargo carriers to beleaguered front-line troops in Russia.

Unit organisation (2): 7 Flieger Division and Luftlande-Sturm Regiment

Ernst Udet had an early introduction to parachuting that explains his later enthusiasm and backing for the creation of a German airborne corps. Shot down over the Western Front during World War I, he was able to jump to safety using a parachute of British design, which had been introduced originally for the crews of observation balloons. There was no ripcord; the back of the 'chute was attached to the fighter's fuselage by a rope that later came to be called a static line. Because the British Royal Flying Corps refused to issue its aircrew with parachutes on the grounds that it might encourage cowardice, the Germans thus had a head start in appreciating the value of the device. Even though the early system was clumsy and far from always reliable, it saved many men's lives and helped sow the seed of an idea that was to revolutionise warfare.

From Polizei to Fallschirmjäger

The growth of that seed was, however, rather haphazard and not a little confusing. It really began on 23 February 1933, less than a month after Adolf Hitler's appointment as Chancellor, when Göring created a small parachute-trained Luftaufsicht within the 414-man Berlin-based Polizeiabteilung 'Wecke' zBV to help combat criminal communist agitators – in modern terms, terrorists. The unit was renamed Landespolizeigruppe 'Wecke' zBV on 17 July and then on 22 December Landespolizeigruppe 'General Göring'. Not until 15 months later, on 1 April 1935 after the reintroduction of conscription, was the unit given the more martial designation Regiment 'General Göring'. Major Wecke surrendered command to one of Göring's adjutants, Oberstleutnant Friedrich Jakoby, on 6 June. On 23 September Göring informed Jakoby that from 1 October his regiment would be transferred into the Luftwaffe and that, 'From volunteers of the regiment, a Fallschirmschützen-Bataillon is to be established as a cadre for the future German Fallschirmtruppe'.

The volunteers were quickly forthcoming and assembled at the Königin-Elisabeth barracks in Berlin-Charlottenburg on 10 November, but it was not until 29 January 1936 that Göring's deputy, Erhard Milch, issued an order of the day officially inaugurating the new corps. The 600 men of the new IV Fallschirmschützen-Bataillon, Regiment 'General Göring' (Fig. 15), moved from Berlin to re-assemble at Altengrabow and Döberitz for familiarisation training with aircraft. In March a parachute school was set up at Stendal-Borstel, 96km west of Berlin, under the initial command of Hauptmann F. W. Immans, and the battalion's men began parachute training there on 4 May. The first to make a jump only a week later was their own commander, Major Bruno Bräuer. By 3 July all of the battalion's men – apart from those who had dropped out – had completed their six qualifying jumps. On 4 October Oberleutnant Hans Kroh led 36 men in three Ju 52s in the first public demonstration of their skills at an air show at Bückeberg, hoping to encourage more volunteers. Unfortunately, one man was injured and had to be carried off on a stretcher.

In February 1937 Oberstleutnant Gerhard Bassenge took over command of the Fliegerschule at Stendal and a month later Leutnant Walter Kiess was

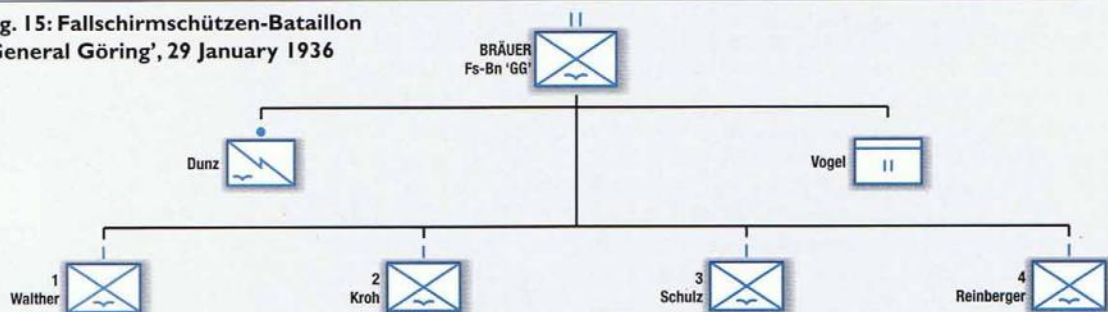
entrusted with setting up an experimental glider unit, the Lastensegler-Ausbildungskommando, at Darmstadt-Griesheim, using prototypes of the new DFS 230. Similarly, an experimental airlanding battalion, the Luftlande-Bataillon 'General Göring', was brought into existence in Berlin, commanded by Oberleutnant Otto Sydow. Before this, on the very same day as Kroh's demonstration and determined not to be outdone, the OKH had ordered the creation of its own parachute company specifically for behind the lines sabotage missions (Zerstörertaktik), the schwere Fallschirm-Infanterie-Kompanie, which came into existence – also at Stendal – on 1 April 1937 under the command of Oberleutnant Hilmar Zahn. As its designation 'schwere' suggests, the company was in effect a support unit with heavy machine guns and mortars. Both it and the Luftwaffe battalion were air-dropped during the annual manoeuvres at Mecklenburg in October. Next, in March 1938 IV Fallschirmschützen-Bataillon was airlanded at Graz in Austria during the Anschluß, then in April it was separated from the Regiment 'General Göring' to be renamed I Bataillon, Fallschirmjäger Regiment 1 (I/FJR 1). Not to be outdone again, on 1 June the army expanded Zahn's company to a full battalion, the Fallschirm-Infanterie-Bataillon des Heeres, entrusting overall command to Major Richard Heidrich.

The most significant event in the evolution of the airborne corps, however, was Göring's appointment of Kurt Student as Inspekteur der Fliegerschule (Fig. 16) to coordinate development of the parachute, glider and airlanding troops and begin forming an airborne division, designated 7 Flieger Division. Although it only existed in cadre, the division officially came into existence on 1 July 1938 with its headquarters at Berlin-Tempelhof. Bassenge became Student's chief of staff with Heinrich Trettner as his operations officer, while Hauptmann Helmuth Reinberger took over the Fliegerschule. Oberleutnant Schleicher was in charge of the Luftnachrichten-Kompanie, also based in Berlin, but the rest of the corps was spread all over the country and even briefly

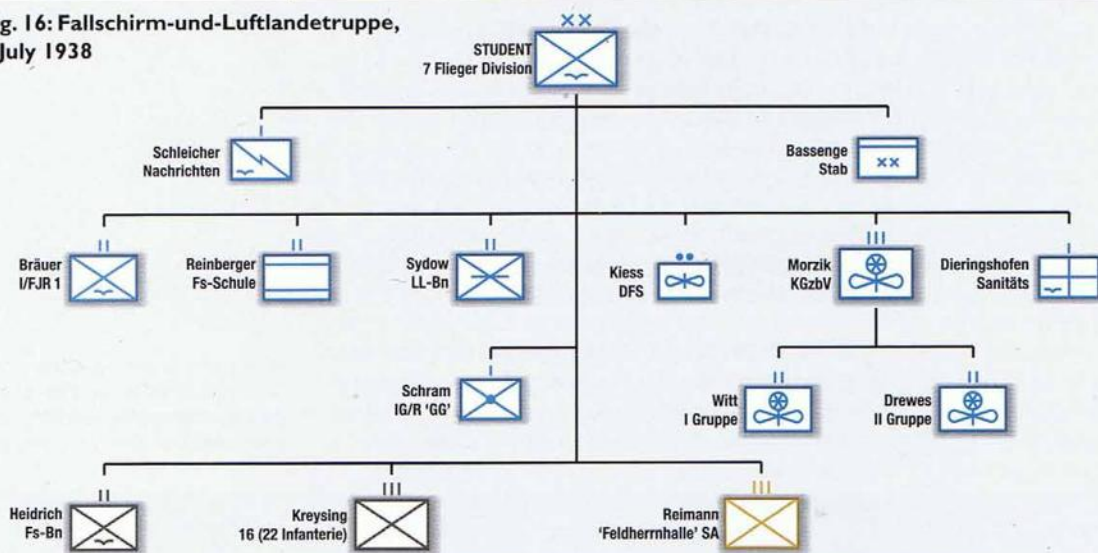
Rare photo of the Fallschirm-Infanterie-Bataillon des Heeres on parade, evidenced by the army-style chest eagles on their jump smocks.



**Fig. 15: Fallschirmschützen-Bataillon
'General Göring', 29 January 1936**



**Fig. 16: Fallschirm-und-Luftlandetruppe,
1 July 1938**

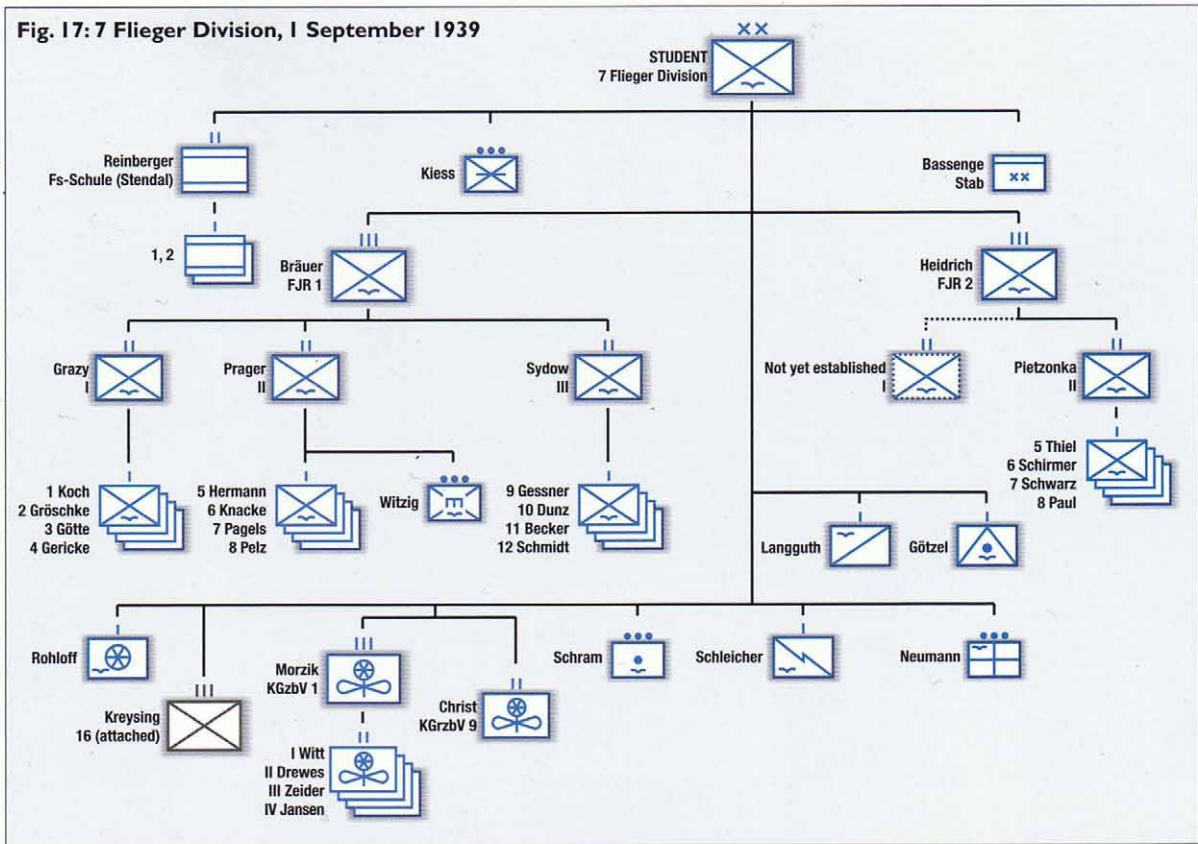


included Brigadeführer Erich Reimann's Standarte 'Feldherrnhalle' of which Göring was honorary Colonel. Other components were, obviously, Bräuer's I/FJR 1 in Berlin and at Döberitz, Heidrich's Fallschirm-Infanterie-Bataillon at Stendal, Kiess's glider unit at Darmstadt and the recently promoted Major Sydow's Luftlande-Bataillon in Berlin. The 'General Göring' Regiment also provided the corps with Infanteriegeschütz- and Sanitätskompanien under Leutnant Bruno Schram and Oberstabsarzt Dr Dieringshofen, both at Gardelegen. Student's new command additionally embraced Oberst Hans Kreysing's Infanterie Regiment Nr. 16 from 22 Infanterie Division at Oldenburg. The fledgling corps had its own Ju 52 transports in Oberst Fritz Morzik's unnumbered KGzBV (later KGzBV 1), comprising 106 aircraft in Major K. G. Witt's I/KGzBV and Major K. Drewes' II/KGzBV (later I/ and II/KGzBV 1). Morzik's aircrew flew I/FJR 1 and elements of IR 16 into the unopposed occupation of the Sudetenland during Übung 'Freudenthal' on 7 October 1938.

Reorganisation and war

The pot-pourri of disparate units obviously had to be shaken into something more cohesive so, first Kiess's gliders were incorporated into the new 7 Flieger Division as the Luftlande-Sturm Kommando, then a Versuchszug each from the 'General Göring' Regiment's Nr. 13 Infanteriegeschützkompanie under Leutnant Schram, one from Nr. 14 Panzerabwehrkompanie under Hauptmann Götzl and one from Oberleutnant Karl-Lothar Schulz's Nr. 15 Pionierkompanie under Leutnant Rudolf Witzig. The Sanitätskompanie also provided

Fig. 17: 7 Flieger Division, 1 September 1939



a platoon under Oberstabsarzt Dr Heinrich Neumann. More dramatically, so impressed had Göring been with the success of the Sudeten exercise that on 1 January 1939 he also managed to manipulate the transfer of Heidrich's battalion from the Heer to the Luftwaffe, when it was designated II/FJR 1 and incorporated Witzig's Pioniere as a fifth, understrength, company. The army battalion had been moved to Braunschweig on 4 November 1938 because I/FJR 1 was itself relocated from Döberitz to Stendal, but most initial parachute training continued at Stendal. When the army objected to a similar transfer of Infanterie Regiment 16 to the Luftwaffe, Sydow's airlanding battalion was detached from the 'General Göring' Regiment instead to form the nucleus of III/FJR 1, absorbing some of the 'Feldherrnhalle' men.

With FJR 1 thus virtually complete and Student given extra responsibility as Kommandeur des Fallschirm-und-Luftlandetruppe, on 26 August 1939 work began on creating a second parachute regiment, which also took on board some of the SA stormtroopers. Bräuer was rewarded with command of FJR 1, Major von Grazy moving up to take over his position as CO of the first battalion. Similarly, Heidrich's pride was promoting him to command of the embryonic FJR 2 while Hauptmann Fritz Prager took over the former army battalion. By the beginning of the Polish campaign on 1 September, however, FJR 2 only had a single battalion under Hauptmann Erich Pietzonka, based at Tangermünde, and no regimental staff (Fig. 17). Total strength of the division was 4,000 men. Pietzonka's II/FJR 2 was deployed in Poland for the ground defence of two airfields at Zisper-Neuforf and Deblin, while Prager's II/FJR 1 was also in the vicinity of Deblin and at Wola-Gulowska (where the paras suffered their first battle casualty) and Sydow's III/FJR 1 was allotted security duties north of Radom. None were air-dropped, all being used – like Kreysing's IR 16 – as conventional infantry.



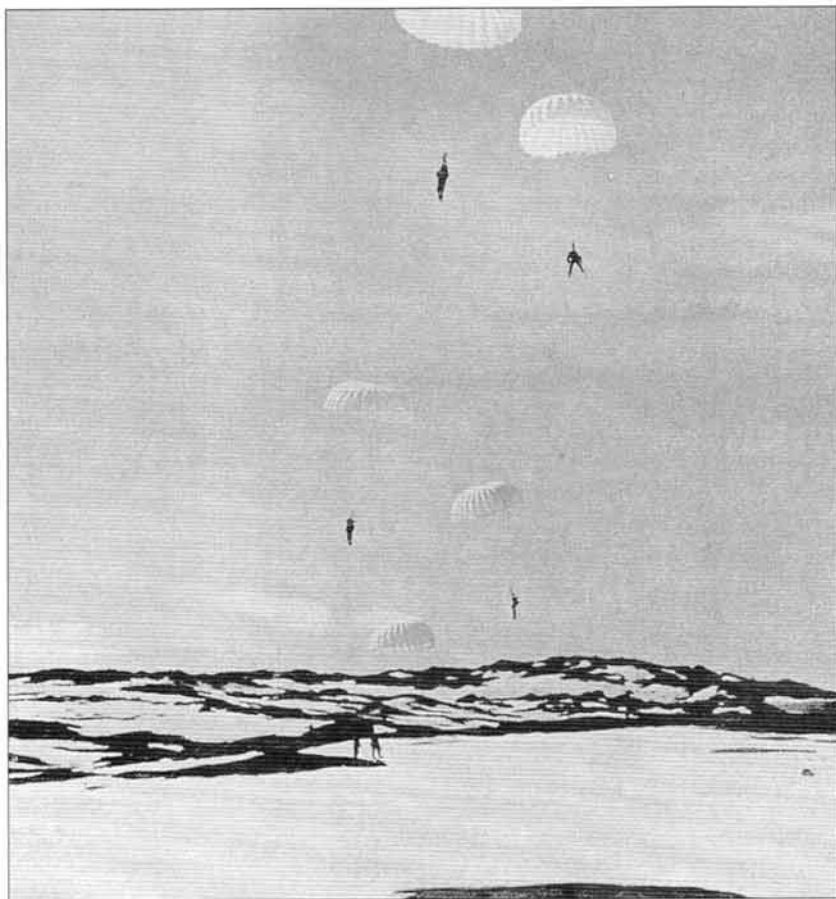
The 'founding father' of the Fallschirmtruppe, Kurt Student, examines maps with divisional officers. The fact that this photo was taken after 1940 is shown by his rank insignia, Knights Cross, and the fact that he is wearing spectacles as he had to after his head wound in Holland. His hearing and speech were also affected.

The conclusion of the short Polish campaign brought further rapid development as a result of the British and French declarations of war. To begin with, of course, in October 22 Infanterie Division was given the suffix 'Luftlande' and attached to Student's Luftlandekorps, while Generalmajor Richard Putzier as Kommandierender-General des Generals zbV was charged with expanding the Ju 52 force to at least 500 aircraft. Gerhard Bassenge was transferred from 7 Flieger Division to become his deputy while Trettner moved up as Student's new Stabschef, a position he occupied until being made operations officer of XI Fliegerkorps in 1941; Hans Kroh became temporary divisional operations officer. Student himself was promoted to Generalleutnant in January 1940 and the whole Luftlandekorps was to form part of General der Flieger und Befehlshaber Nordwest Albert Kesselring's Luftflotte 2 (Fig. 18).

There was a sense of urgency to the preparations even though the OKW knew the British and French were totally unprepared for war, because it was essential to strike first, before the Allies were fully mobilised. However, Hitler had other targets as well. Précising, he wanted Norway because of its rich mineral resources, particularly iron ore, but this was also a successful diversionary strategy to draw British troops away from the scene of the impending main action in France and Belgium. Denmark had to be occupied too, in order to seal off the Skagerrak and Kattegat and deny the Royal Navy access to the Baltic. Holland, which had managed to remain neutral during World War I, thus became a target for similar reasons and the Fallschirmjäger were to find themselves employed in all these outflanking manoeuvres as well as in Belgium, the Schwerpunkt of Fall Gelb – 'Case Yellow', codename for the blitzkrieg in the west.

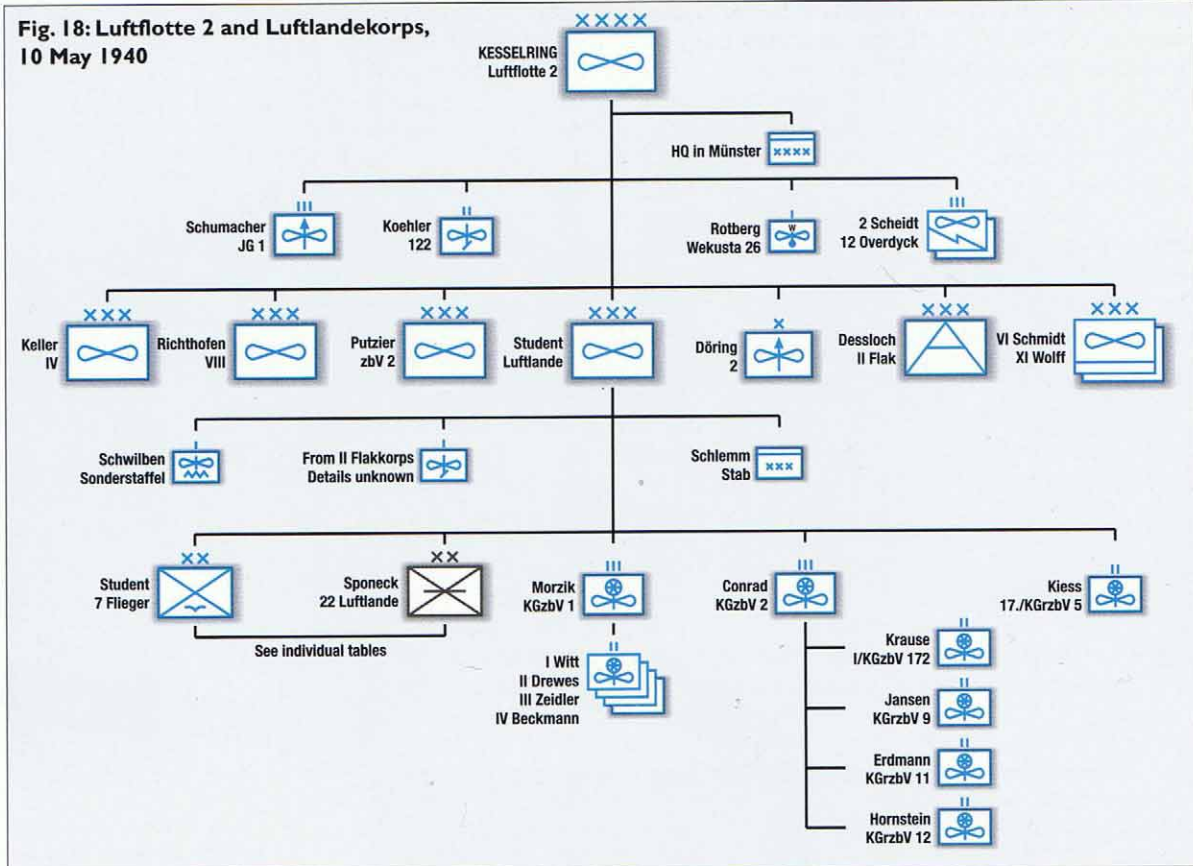
Only a small part of 7 Flieger Division was deployed during the invasions of Denmark and Norway ('Weserübung Süd' and 'Weserübung Nord'), which began on 9 April 1940 (Fig. 19), I/EJR 1, now commanded by Hauptmann Erich Walther, and Pietzonka's II/EJR2 being flown to their objectives in the Ju 52s of Major

Drewes' II/KGzbV 1. A brief résumé of these early operations is in order because post-battle analysis of their mixed results was significant to the subsequent reorganisation of the airborne corps. In Denmark the paras encountered no opposition, a single platoon from Walther Gericke's Nr. 4 Kompanie capturing the Ålborg airfields in the north of the country while the rest of the company seized the Stoerstrom bridge linking the island of Falster to Sjælland south of Copenhagen. In Norway the tale was less happy. Erich Walther's own Stabskompanie and Oberleutnant Kurt Gröschke's Nr. 2 Kompanie were entrusted with the seizure of Oslo's Fornebu airport but the area was shrouded in mist so the parachute drop was abandoned. While fighters tried to suppress the heavy flak, the Ju 52 pilots managed to land their aircraft but the paras, lacking the element of surprise, failed to overcome all the opposition until reinforced by the army's Infanterie Regiment Nr. 163. Oberleutnant von Brandis's Nr. 3 Kompanie was more fortunate and, dropped south of Stavanger, overran Sola airport after a token firefight. Further to the north there was disaster. Dropped in the Gudbrandsalen valley at Dombas 150km north of Oslo on 14 April to try to prevent a link-up between British and Norwegian troops, Oberleutnant Herbert Schmidt's Nr. 1 Kompanie was hopelessly outnumbered but fought on until the 34 survivors were forced to surrender when they ran out of ammunition. (Schmidt and his men were repatriated after the Norwegian capitulation but in the meanwhile Oberleutnant Götte assumed command of a reconstituted Nr. 1 Kompanie.) Finally, Hauptmann Erich Pietzonka's II/FJR 2, which had already fought in Rotterdam, was deployed a month later, over 23-25 May, to bring welcome assistance to General Eduard Dietl's heavily pressed 3 Gebirgs Division at Narvik.

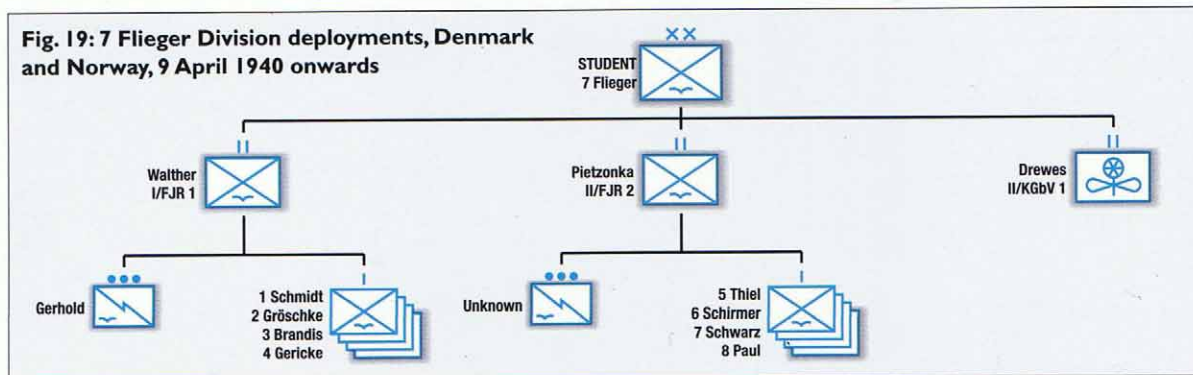


Men of Pietzonka's II/FJR 2 drop near Narvik in May 1940. They were joined by 200 men from 3 Gebirgs Division who had gone through a crash parachuting course – including Eugen Meindl, later CO of the LLStR.

**Fig. 18: Luftflotte 2 and Luftlandekorps,
10 May 1940**



**Fig. 19: 7 Flieger Division deployments, Denmark
and Norway, 9 April 1940 onwards**



Vindication: Belgium and Holland

Meanwhile, the rest of 7 Flieger Division (Fig. 20) had also been busy. Of principal historical significance was the creation of Sturmabteilung 'Koch' for operations in Belgium south of Maastricht. One of the keys to getting the Panzers of von Rundstedt's Armeegruppe A out of the Ardennes and into more open country was the seizure of three bridges over the Albert Canal, but these were overlooked by the gun casemates of the fortress of Eben Emael. Despite army misgivings, Student managed to win approval for his plan to capture all these objectives simultaneously using a specially trained airborne task force that would operate separately from the rest of 7 Flieger Division. To head this unit he selected Hauptmann Walter Koch, Schmidt's predecessor as CO of 1.I/FJR 1. From a flood of volunteers, Student, Bräuer, Trettner and Koch picked

ten other officers and 427 men who included 42 of Kiess's glider pilots from the renamed 17./KGrzbV 5. All the remainder came from Walther's I/FJR 1 apart from Oberleutnant Rudolf Witzig, his deputy, Leutnant Egon Delica, and the 83 NCOs and men of the Pionierkompanie detached from Prager's II/FJR 1. The total number of officers and men who actually took part in the assault operations was 362.

The Sturmabteilung (Fig. 21) began forming at Hildesheim in November 1939. Security was tight and two men were actually sentenced to death for breaches, although the sentences were later commuted. Thanks to information provided by the Abwehr, the men began rehearsing for their task using the Polish fortifications at Gleiwitz to practise their techniques, as well as traditional Kriegspiel sand-tables. The assault troops were split into four groups

Fig. 20: 7 Flieger Division, 10 May 1940

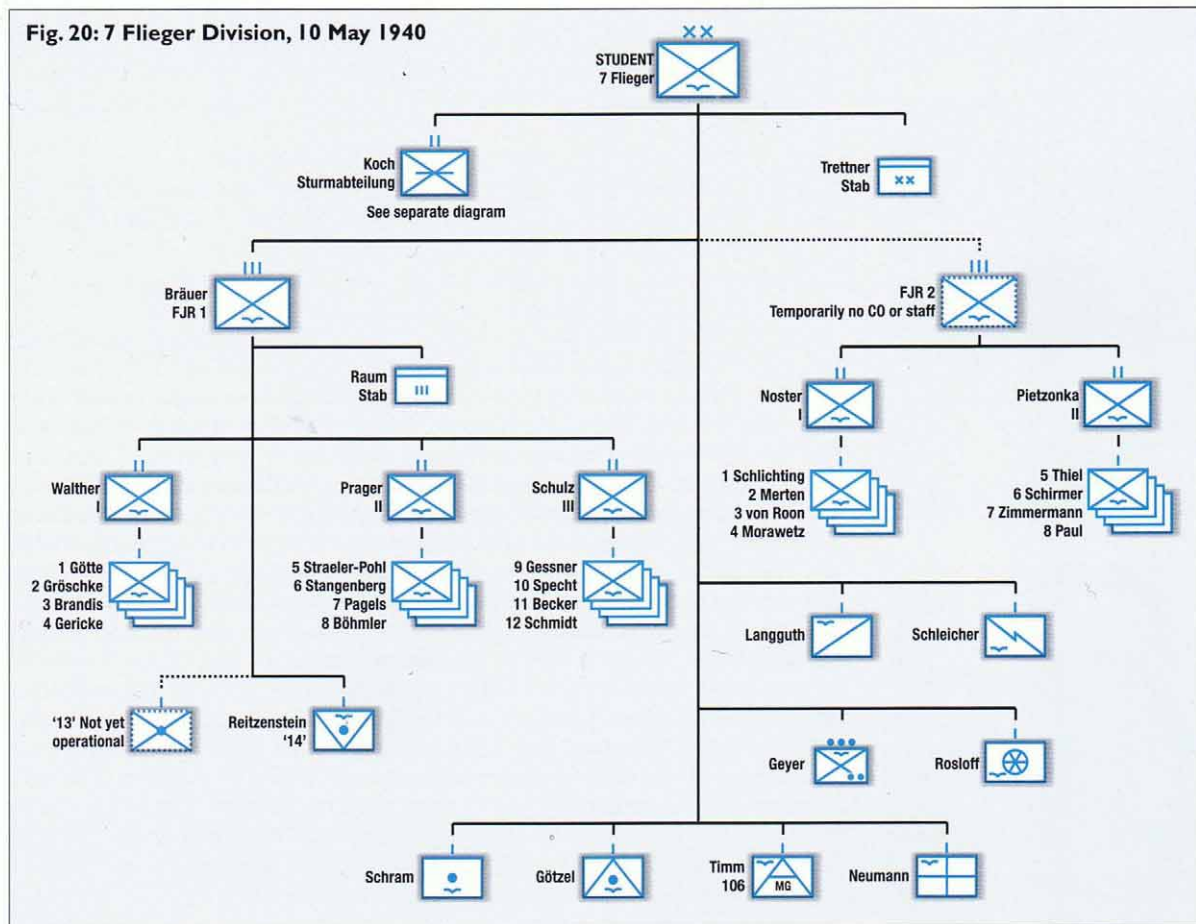
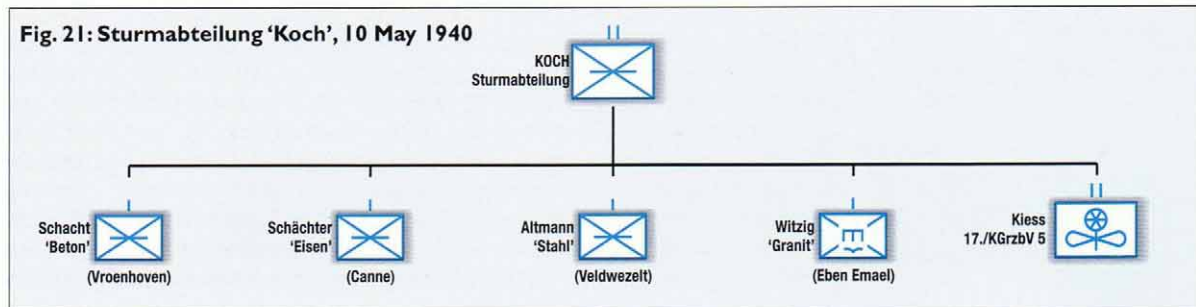


Fig. 21: Sturmabteilung 'Koch', 10 May 1940





Three of the heroes of Belgium: top to bottom, Walter Koch, actually photographed in the aftermath of Crete, Walter Kiess, the glider pioneer and Rudolf Witzig, the Pionier who postwar became CO of the Bundeswehr's military engineering school.

given appropriate codenames, 'Beton', 'Eisen', 'Granit' and 'Stahl' – concrete, iron, granite and steel. The first-named consisted of 96 men commanded by Leutnant Gerhard Schacht in 11 gliders whose target was the bridge at Vroenhoven. Koch's own small command group joined them in a 12th glider. Leutnant Martin Schächter's 90 men from Gruppe 'Eisen' flew in ten gliders to take the bridge at Canne. Oberleutnant Gustav Altmann and the 91 men of Gruppe 'Stahl' were cramped into nine gliders to take the third bridge at Veldwezelt. We are fortunate in that Gruppe 'Granit's' exploit in capturing Eben Emael itself was so dramatic that it is extraordinarily well documented. Even though its gliders were not as congested with men as those of the other groups, the Pioniere had to squeeze in flamethrowers, demolition charges and scaling ladders as well. It consisted of:

Trupp 1: Leutnant Egon Delica, Feldwebel Niedermeier and pilot Feldwebel Raschke plus 5 men

Trupp 2: Oberjäger Meier, pilot Unteroffizier Brendenbeck plus six men

Trupp 3: Oberjäger Arent, pilot Unteroffizier Sapper plus six men

Trupp 4: Oberfeldwebel Helmuth Wenzel, pilot Unteroffizier Bräutigam plus six men

Trupp 5: Feldwebel Haug, pilot Unteroffizier Lange plus six men

Trupp 6: Oberjäger Harlos, pilot Unteroffizier Zille plus six men

Trupp 7: Oberjäger Heinemann, pilot Unteroffizier Scheidhauer plus six men

Trupp 8: Oberjäger Unger, pilot Unteroffizier Distelmeier plus six men

Trupp 9: Oberjäger Neuhaus, pilot Unteroffizier Schulz plus six men

Trupp 10: Oberjäger Hübel, pilot Unteroffizier Kraft plus six men

Trupp 11: Oberleutnant Rudolf Witzig, Oberjäger Schwarz, pilot Unteroffizier Pilz plus four men.

All the pilots were, of course, combat-trained Fallschirmjäger as well. They began taking off from Köln-Butzweilerhof and Köln-Ostheim airfields at 0430hrs on 10 May. Unfortunately, the tow cables of Truppe 2 and 11 parted shortly after take-off and the gliders had to force-land, but Pilz managed to secure another tow and land Witzig at Eben Emael at 0650hrs. In the interim, Delica assumed command of the southern element on the plateau and Wenzel the northern. Similarly, Schächter had been wounded at Canne – where the Belgians succeeded in blowing the bridge – and command of Gruppe 'Eisen' passed to Leutnant Joachim Meissner. A résumé of the Sturmabteilung's achievements is given in the Tactics section.

Returning to 7 Fliieger Division on 10 May 1940 without Koch's detachment, a glance back at Fig. 20 will show that Bräuer was still Chef of FJR 1 and that FJR 2 now had two battalions but no regimental commander, because Heidrich had been seconded temporarily back to the Heer. The only changes in battalion commanders since 1939 (Fig. 17) were that Sydow had been replaced by Hauptmann Karl-Lothar Schulz and the new I/FJR 2 based at Gardelegen was led by Hauptmann Herbert Noster. Some of the original rifle companies had also changed hands, eg, from Koch to Schmidt to Götte, but Schleicher was still in charge of communications, Schram of the division's miserable artillery, Götzel of the fledgling Panzerjäger-Abteilung and Dr Neumann of an enlarged Sanitätskompanie. Oberleutnant Langguth was now in charge of a new reconnaissance company, called Aufklärungstaffel in air force instead of army fashion, while Leutnant Geyer had command of a new motorcycle platoon (Kradschützenzug). Finally, Student had acquired 12 20mm anti-aircraft guns in Oberleutnant Erich Timm's leichte Flakbatterie 106. The division's own aerial transport remained Morzik's KGzBV 1 while that of 22 Luftlande Division was entrusted to Oberst G. Conrad's KGzBV 2 (see accompanying table). Student's principal divisional staff on 10 May is shown in the subsequent table, and the overall divisional organisation for comparison with that of 22 Luftlande Division at the same time is given in the third table.

LUFTLANDEKORPS FLYING UNITS	Commanding officer	Airfield location	Aircraft type	Number on strength
KGzbV 1	Oberst F.W. Morzik		Ju 52/3mg/78e	
Stab		Münster-Loddenheide	"	1
I/KGzbV 1	Major K. G. Witt	Werl	"	51
II/KGzbV 1	Major K. Drewes	Münster-Loddenheide	"	53
III/KGzbV 1	Hauptmann M. Zeidler	"	"	50
IV/KGzbV 1	Hauptmann T. Beckmann	"	"	0
KGzbV 2	Oberst G. Conrad		Ju 52/3mg/78e	
Stab		Lippspringe	"	1
I/KGzbV 172	Hauptmann R. Krause	Paderborn	"	48
KGrzbV 9	Oberstleutnant K. Jansen	Lippspringe	"	53
KGrzbV 11	Hauptmann H. E. Freiherr von Hornbach	Lippstadt	"	51
KGrzbV 12	Oberstleutnant G. Wilke	Störmede	"	51
17./KGrzbV 5	Oberleutnant W. Kless	Köln	Ju 52/3mg(?)e	42
			DFS 230A-1	42
			Total Ju 52s:	401
			DFS 230s:	42

A couple of things will spring out from these tables. No Judge Advocate (III) had been appointed and there were no divisional Feldgendarmarie. There was no divisional Chaplain (IVd) although each regiment had one. There was no veterinary officer (IVc) – which is no surprise! The role of chief administrator (IVa) was occupied by a civilian, a Nazi Party appointment, while the task of motor transport officer (V), given the division's paucity of wheeled transport, had been occupied by Hauptmann Rosloff, who was not a staff officer. Finally, there was no Ib, or Quartermaster; the division's logistic needs were all supplied at Korps level through Luftflotte 2's Luftgaeue VI and XI. As a result, there is no equivalent in Fig. 20 or the tables to the trains of 22 Luftlande Division.

With Sturmabteilung 'Koch' deployed in Belgium, the remainder of the division was assigned to attack Dutch airfields and bridges. Walther's I/FJR 1,

Divisionsstab, 7 Flieger Division, 10 May 1940		
Divisionskommandeur: <i>Generalleutnant Kurt Student</i>		
<i>Führungsabteilung</i>	<i>Adjutantur</i>	<i>Quartiermeister</i>
Ia Major Heinrich Tretzner		IVa Amtmann Viztum
Ia op 1 Hauptmann Hans Kroh	IIa Oberstleutnant von Fichte	IVb Oberfeldarzt Dr. Knebel
Ia op 2 Hauptmann Edward Hübner	IIb Major Ehrlich	Waffen und Gerät Hauptmann
Ib Hauptmann Osterroth	(NB: No III or IVd)	Käthler
Ic Oberleutnant Lampertsdörfer		Fliegeringenieur Fliegerstabsingenieur
Ic AO Major Bock		Stock
Ordonnanzoffizier Oberleutnant Herrmann		(NB: No Ib, IVc or V)
Nachrichtenfürer Major Schostag		

7 Flieger Division, 10 May 1940

Generalleutnant Kurt Student

Divisionsstab (as above)

Fallschirmjäger Regiment 1

Oberst Bräuer

Stabskompanie

I/FJR 1 (Major Walther)

1-3 Jäger-Kompanien

4 Fallschirm-MG-Kompanie II/FJR 1 (Hauptmann Prager)

5-7 Jäger-Kompanien

8 Fallschirm-MG-Kompanie

III/FJR 1 (Hauptmann Schutz)

9-11 Jäger-Kompanien

12 Fallschirm-MG-Kompanie

'13' Infanteriegeschützkompanie (not yet operational)

'14' Panzerabwehrkompanie (Oberleutnant Reitzenstein)

Fallschirmjäger Regiment 2

No CO or Stabskompanie

I/FJR 2 (Hauptmann Noster)

1-3 Jäger-Kompanien

4 Fallschirm-MG-Kompanie

II/FJR 2 (Hauptmann Pietzonka)

5-7 Jäger-Kompanien

8 Fallschirm-MG-Kompanie

7 Fallschirmgeschützbatterie (Oberleutnant Schram)

7 Pakkompanie (Hauptmann Götzel)

7 Aufklärungsstaffel (Oberleutnant Langguth)

7 Luftnachrichten-Kompanie (Oberleutnant Schleicher)

7 Kradschützenzug (Leutnant Geyer)

7 Transportkompanie (Hauptmann Rosloff)

7 Sanitätskompanie (Oberstabsarzt Dr Neumann)

106 leichte Flakbatterie (Oberleutnant Timm)

scarcely recovered from the operations in Norway, was given the bridges over the river Maas at Dordrecht, Prager's II/FJR 1 those over the same river at Moerdijk, Schulz's III/FJR 1 and Pietzonka's II/FJR 2 the airfield at Rotterdam-Waalhaven and Noster's I/FJR 2 the smaller airfields at Ockenburg, Valkenburg and Ypenburg close to Den Haag. Schram's four 7.5cm GebK15s and half of Dr Neumann's medical company were airlanded at Waalhaven after its seizure. The most successful operations were those at Moerdijk, which the paras held until relieved by 9 Panzer Division on 14 May, and at Waalhaven where Kreysing's IR 16 and Götzel's anti-tank gunners rapidly reinforced them and began moving on Rotterdam itself. Kurt Student flew into Waalhaven after its capture, then drove into the city to take its surrender, which is when he was accidentally shot. Dutch resistance was much stronger than that in Belgium or Denmark and the Dordrecht rail bridge was retaken before German ground forces arrived. The paras dropped successfully at Valkenburg but the ground was so waterlogged that the wheels of the Ju 52s carrying 22 Luftlande Division's IR 47 dug themselves in, groundlooping many aircraft and killing or injuring large numbers of men. At Ypenburg the paras dropped short, while the Dutch had also strewn the landing area with debris so most of the follow-up aircraft carrying the bulk of IR 65 - accompanied by von Sponeck - flew on to Ockenburg. Here, both the flak and the ground opposition denied success to the paras, von Sponeck was also wounded and the attack on Den Haag was called off. None of the dozen Flak38s in Timm's anti-aircraft battery were deployed.

The T/O&E of the parachute rifle battalions at this stage of the war varied and sources are contradictory, but the following is based on analysis to give at least a Soll Gliederung. The basis was a 12-man squad, necessitated by the carrying capacity of the Ju 52. In the glider units, however, it was only eight to ten (see DFS 230). Most battalions only had a Hauptmann instead of a Major as CO and the majority of the rifle companies similarly an

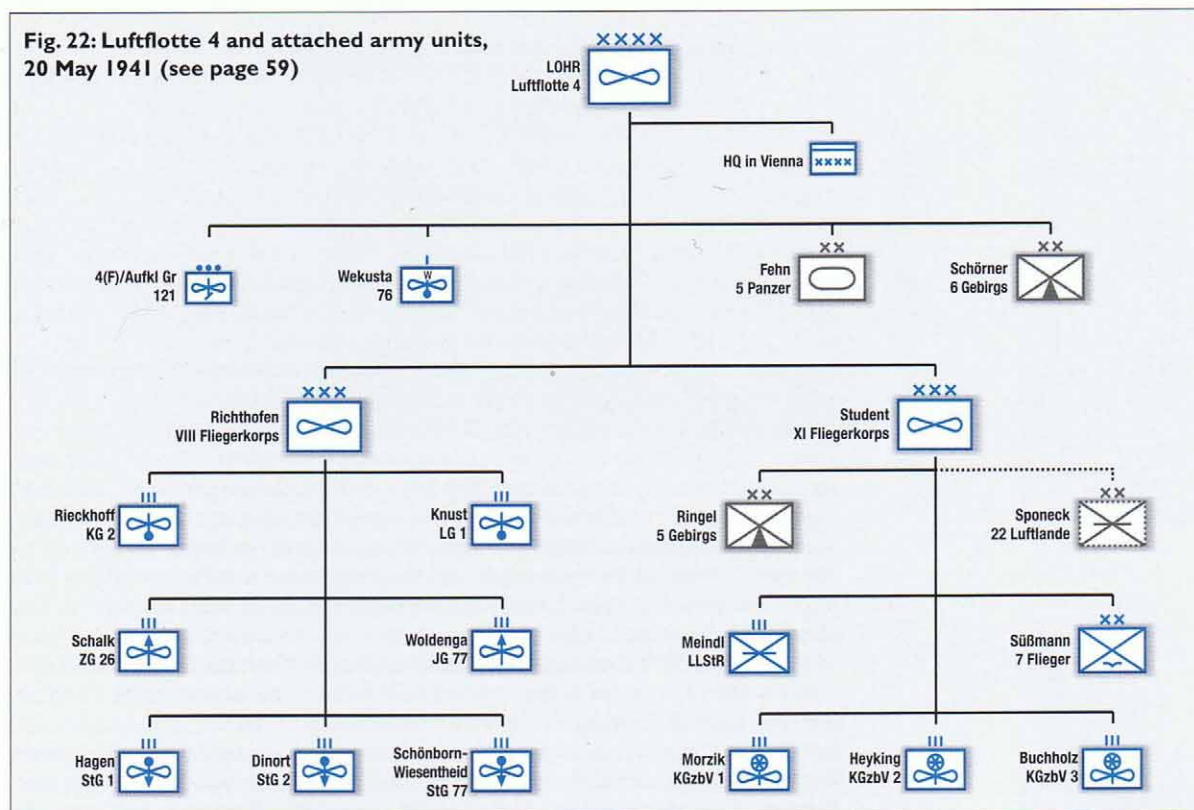
Oberleutnant instead of a Hauptmann. Each of their three platoons was, however, led by a Leutnant, not just one of them as in 22 Luftlande Division. Another difference between the two is that there was a mortar section instead of the weapons being spread between the three platoons. As far as can be ascertained, then, the table overleaf shows the composition of a 'standard' parachute rifle company.

This, as a comparison with that of 22 Luftlande Division quickly shows, was also weaker than its army equivalent at 162 officers and men but had far more automatic weapons so was actually stronger in firepower. The machine-gun company was identical to its army counterpart but lacked the supply column to total just 166 officers and men. The battalion HQ was the same apart for the absence of a veterinary officer to total 31 officers and men, while the signals platoon remained the same at 22. The nominal establishment was thus 20 officers, 88 NCOs (excluding Gefreiter) and 597 enlisted for a total of 705.

Witzig's engineer company, as shown above, was really only the equivalent of two platoons. Both 14.I/FJR 1 and 7 Pakkompanie were equipped and manned identically to the army Panzerabwehrkompanien. The artillery component was woefully lacking and only comprised a single battery of four usable guns. The new motorcycle platoon had, I believe, 17-18 motorcycles, but I have been unable to find out how many were solo and how many sidecar combinations. The recce company had two platoons, both with pedal cycles.

As will already be obvious, 7 Flieger Division in 1940 thus had serious shortcomings which are only to be expected considering how short a time it had been in existence, that new weapons were still under development and that it had to compete with all the other services for manpower and resources. Its achievements were therefore all the more outstanding, as shown in Hitler's bestowal of 26 Knights Crosses at the conclusion of Fall Gelb - including one to Kurt Student himself. This gave him heart while he was recovering from his

Fig. 22: Luftflotte 4 and attached army units, 20 May 1941 (see page 59)



Fallschirmjäger Schützenkompanie	Officers	Weapon(s)	NCOs	Weapon(s)	Enlisted	Weapon(s)
Kompanie HQ	Oberleutnant	Pistol	3 1 (medic)	Pistols+MP40s Pistol	9	Pistols+Carbines
Nr. 1 Zug Zug HQ	Leutnant	Pistol+MP40			2 * 1 (medic) 2	Pistols+MP40s Pistol Pistols+Carbines
Nr. 1 Trupp			1	Pistol+MP40	1 1 1 * 8	MG34+Pistol Pistol Pistol+MP40 Pistols+Carbines
Nr. 2 Trupp			1	Pistol+MP40	1 1 1 * 8	MG34+Pistol Pistol Pistol+MP40 Pistols+Carbines
Nr. 3 Trupp			1	Pistol+MP40	1 1 1 * 8	MG34+Pistol Pistol Pistol+MP40 Pistols+Carbines
Nr. 2 & 3 Züge as Nr. 1	Leutnant 2	Pistols+MP40s	6	Pistols+MP40s	6 8 10 * 52	MG34s+Pistols Pistols Pistols+MP40s Pistols+Carbines
Mörsertrupp			1 (senior) 3	Pistol+MP40 Pistols+MP40s	3 6 6 * 3	leGrV36s+Pistols Pistols Pistols+MP40s Pistols+Carbines
TOTALS	4	3 x MP40 4 x Pistol	17	16 x MP40 17 x Pistol	141	9 x MG34 3 x leGrV36 36 x MP40 90 x Carbine 141 x Pistol
*Oberjäger or Gefreiter.						

head wound, temporary command of the division having been entrusted to Richard Putzier, as did his promotion to General der Flieger in August. The next few months were busy and saw the creation of XI Fliegerkorps on 21 January 1941 with Student in command. On the same day, 7 Flieger Division itself acquired a new CO, Generalleutnant Wilhelm Süßmann, who in 1939–40 had commanded the He 111 bombers of KG 55.

What Student had learned from the operations in 1940 was, first and foremost, that his men had actually been very lucky because the forces spread so thinly between such a diversity of objectives were individually too weak and where they had achieved success it was almost entirely through the element of surprise. Where the opposition was alert, they had suffered and success was marginal. Another factor that had come into play was the weather, but there was nothing to

be done about that except pray. The third and fourth elements were closely related: the paras lacked the 'muscle' for a sustained battle until they had both more and better artillery, including mortars, or unless they were relieved very quickly by conventional forces. Student was forceful and persuasive in expressing these opinions and the resultant XI Fliegerkorps and hugely expanded 7 Flieger Division (Figs. 23 and 24) showed dramatic improvements.

All those 'in the know' had their sights focused on Russia after the abandonment of the planned invasion of England, but Mussolini's rash incursions into Egypt in September and then Greece in October 1940 brought the Mediterranean into the picture as well. The Soviet occupation of Bessarabia in June had already brought the Red Army within easy striking distance of the Ploesti oilfields in Romania, and after the conclusion of the French campaign, 22 Luftlande Division was despatched to secure them. The arrival of British bombers in Greece in November brought the vital oil under further threat so in December Hitler decided upon an unwanted secondary campaign, codenamed Marita, to secure his southern flank before the start of Barbarossa.

7 Flieger Division only re-entered the picture after the Führer's decision to invade Greece because it could be used to capture several of the larger Greek islands where British troops were believed to be garrisoned. To begin with, though, only FJR 2 – now finally with a commander, Oberst Alfred Sturm – was deployed to Plovdiv in Bulgaria with the original intent of dropping it on Lemnos. That plan was shelved when the mainland assault, which began on 6 April, was already proving conclusive, because Hitler personally conceived a more useful role for the regiment. With the British expeditionary forces in full retreat to evacuation ports in the south of the country, he saw their escape could be prevented by capturing the one and only bridge linking Attica to the Peloponnesus across the Korinthos Canal. Bypassing Student entirely for some inscrutable reason, the OKW ordered General der Flieger und Befehlshaber Südost Alexander Löhr, CO of Luftflotte 4 (Fig. 22), to seize and hold the bridge using Sturm's Fallschirmjäger. As the map in the Tactics section shows, it was a bold and imaginative move and the fact that it only partially succeeded was no fault of the paras.

Maturity and nemesis: Crete

Hitler now returned to the original idea of using 7 Flieger Division to capture islands, but by this time attention had concentrated on Crete – which not only held a large naval base at Suda from where the Royal Navy controlled the Aegean and north-eastern Mediterranean, but also three airfields from which RAF bombers could still threaten Ploesti. Between September 1940 when Student returned to duty and January 1941 with the creation of XI Fliegerkorps (Fig. 23), 7 Flieger Division was both expanded and reorganised (Fig. 24). Each of its three regiments now comprised three battalions plus a Nachrichtenzug and Infanteriegeschütz- and Panzerjägerkompanien. Schram's artillery component had been enlarged to a full battalion under Major Heinrich Bode with two batteries of new 7.5cm recoilless guns and one with 10.5cm weapons. Each battery had four guns subdivided in the usual fashion into firing batteries of two. Similarly, Witzig's small engineer command was now a full battalion under Major Egon Liebach, organised the same as its army equivalent apart for the absence of a supply train. The reconnaissance and motorcycle platoons had disappeared but there was a new machine-gun battalion under Hauptmann Schulz, which consisted of three army-style companies minus the trains. The anti-tank element had been increased to a full battalion under Hauptmann Schmitz, now also designated Panzerjäger instead of Panzerabwehr, and equipped with 36 5cm PaK38s in three companies. In the same way there was a full anti-aircraft battalion with 36 Flak38s under Hauptmann Baier and a four-company medical battalion under Oberfeldarzt Dr von Berg. Major i.G. Conrad-Bernhard Graf von Üxküll was now chief of staff under Süßmann while Generalmajor Alfred Schlemm had



Three of the heroes of Holland: top to bottom, Erich Walther, Fritz Prager and Karl-Lothar Schulz, the last-named photographed later in the war as CO of I Fallschirm Division in Italy.

Fig. 23: XI Fliegerkorps and attached army units, 20 May 1941

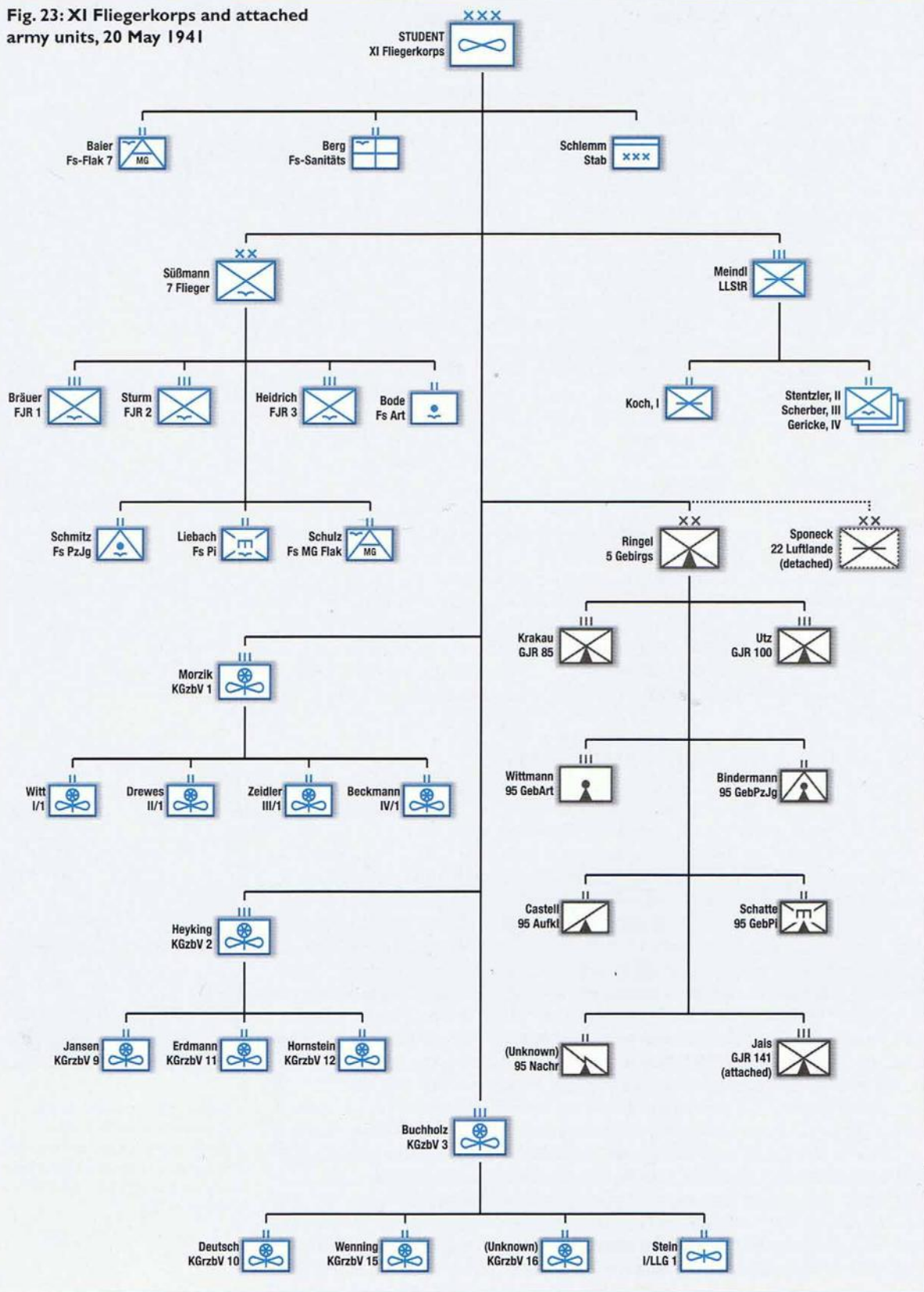
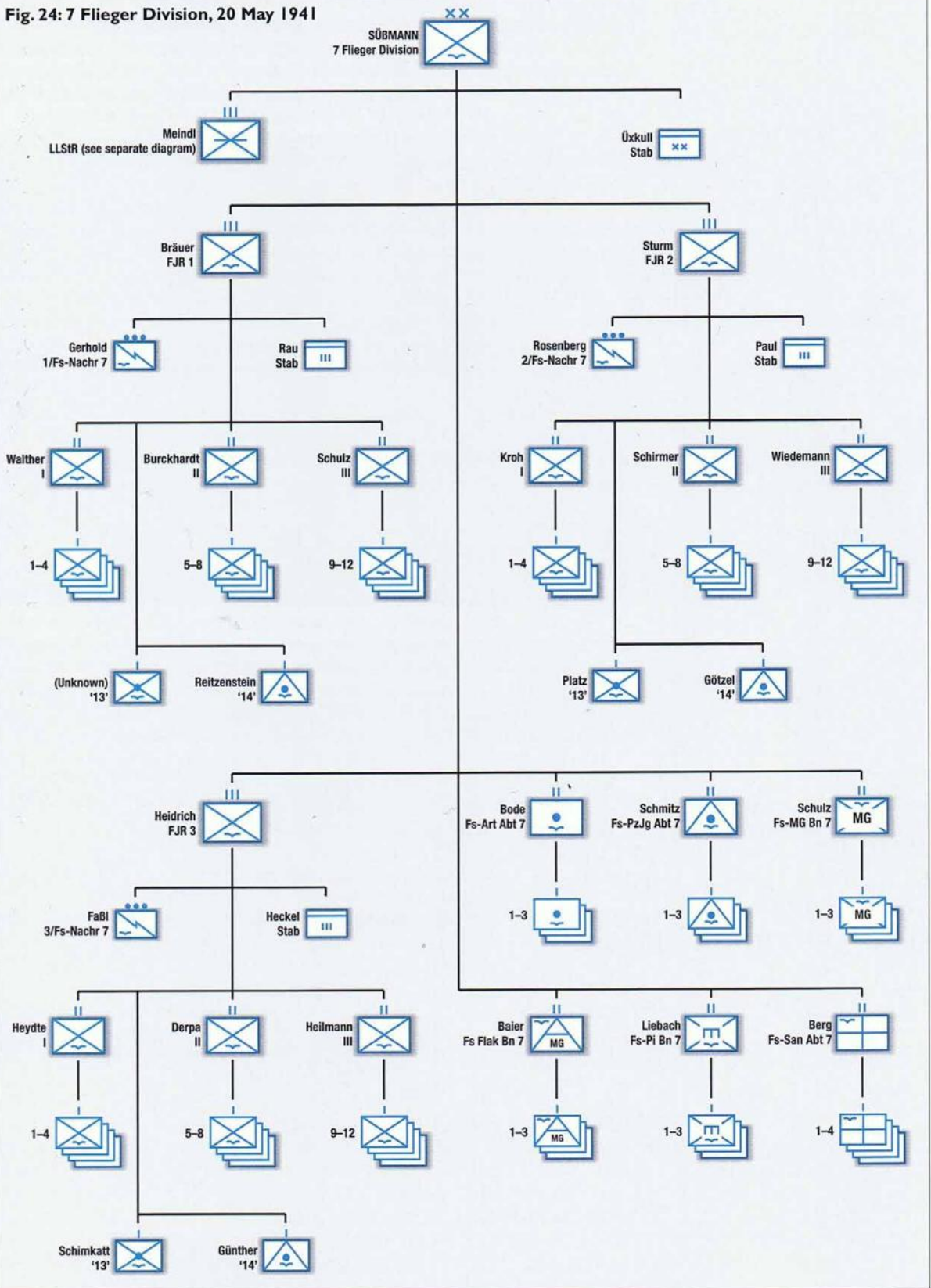
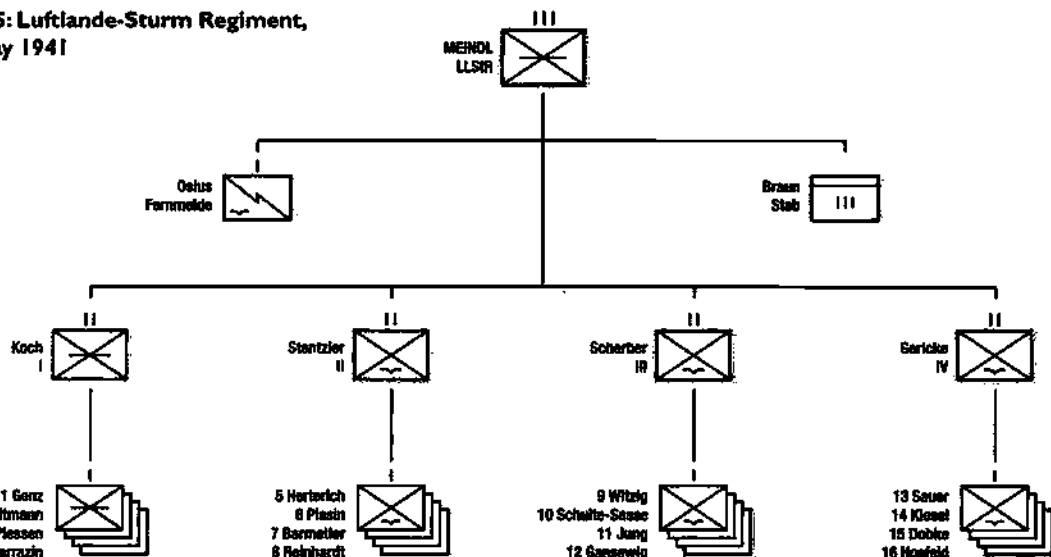


Fig. 24: 7 Flieger Division, 20 May 1941



become Student's chief of staff in XI Fliegerkorps with Trettner reverting to operations officer. The last major component of 7 Flieger Division, although it is always listed independently in Luftwaffe records, was the four-battalion Luftlande-Sturm Regiment, an expanded version of the original Sturmabteilung 'Koch' now commanded by Generalmajor Eugen Meindl (Fig. 25). In fact, despite

**Fig. 25: Luftlande-Sturm Regiment,
20 May 1941**



XI FLIEGERKORPS FLYING UNITS	Commanding officer	Airfield location	Aircraft type	Number on strength
KGzbV 1	Oberst F.W. Morzik		Ju 52/3mg7/8e	
Stab		Dadion	"	1
I/KGzbV 1	Major K. G. Witt	Megara	"	53
II/KGzbV 1	Oberstleutnant K. Drewes	"	"	53
III/KGzbV 1 (I/KGzbV 172)	Hauptmann M. Zeidler	Korinthos	"	53
IV/KGzbV 1 (II/KGzbV 172)	Major T. Beckmann	"	"	53
KGzbV 2	Oberst R. von Heyking			
Stab		Topolia	"	1
KGrzbV 9 (KGrzbV 60)	Major K. Jansen	"	"	53
KGrzbV 11 (KGrzbV 101)	Oberstleutnant W. Erdmann	"	"	53
KGrzbV 12 (KGrzbV 102)	Hauptmann Freiherr von Hornstein	"	"	53
KGzbV 3	Oberst U. Buchholz			
Stab		Tanagra	"	1
KGrzbV 10 (KGrzbV 40)	Major Deutsch	"	"	53
KGrzbV 15 (KGrzbV 105)	Major Wenning	"	"	53
KGrzbV 16 (KGrzbV 106)	Unknown	"	"	53
I/LLG 1	Major Stein	"	DFS 230A-1	69
			Total Ju 52s:	533
			DFS 230s:	69

its name, only Koch's own I/LLStR had DFS 230s from the once-again-renamed I Gruppe, Luftlande-Lastensegler Geschwader 1 (I/LLG 1) now under Major Stein. The remainder of the men were parachute-dropped on Crete, including the 72-man Kampftrupp led by Leutnant Peter Mürbe and Oberleutnant Osius's 130-strong Fernmeldekompanie.

The division was now 11,000 men strong, of whom 8,060, mostly from the rifle battalions, would take part in the actual assault phases. There were insufficient aircraft, even flying in two waves after returning to Greece for refuelling and reloading, to carry more in a single day (see accompanying table). Moreover, there were the 13,980 men in Generalmajor Julius Ringel's attached 5 Gebirgs Division to consider (Fig. 23). Many of the men would therefore have to be transported by sea in commandeered Greek boats, a venture that turned into a disaster because of the Royal Navy. Only after this failure were surviving elements of Bode's artillery, Schmitz's anti-tank guns and Baier's anti-aircraft guns parachuted or airlanded in. Because the invasion forces were additionally split into three groups – West, Mitte and Ost – for the assault, the following table displays them in this unconventional fashion, giving their principal objectives as well.

As in 1940, it is Koch's battalion for which the most complete breakdown has survived, and the figures reveal the differences already mentioned between the strengths of the parachute and glider companies, as well as wide variations. Leutnant Alfred Genz's Nr. 1 Kompanie only comprised 90 men in nine gliders; Hauptmann Gustav Altmann's Nr. 2 Kompanie was 150-strong and ferried in 15 gliders; Oberleutnant Wulf von Plessen's Nr. 3 Kompanie had 108 men in 14 gliders, while Hauptmann Kurt Sarrazin's Nr. 4 Kompanie, which Koch himself travelled with, comprised 120 men in 15 gliders. The Stabskompanie under Major Franz Braun had 90 men in nine gliders. The remaining four gliders for which pilots were available carried General Süßmann and the divisional staff; unfortunately, Süßmann's own glider allegedly got caught in the slipstream of an He 111 and he was killed when it crashed on the island of Aegina. Richard Heidrich therefore assumed command of Gruppe Mitte at Caneá/Suda. Similarly, both Meindl and Koch were wounded so Stentzler took over at Máleme until the arrival of Oberst Bernhard Ramcke on the 21st, while Oberst Alfred Sturm, in the middle of the three groups at Rétimo, was given temporary promotion and overall command of the division.

Koch's I/LLStR had the usual six heavy machine guns and 8.1cm mortars in Nr. 4 Kompanie; Stentzler's II/LLStR had the same in Nr. 8 Kompanie, plus three PaK36s; Scherber's III/LLStR's Nr. 12 Kompanie had four anti-tank guns and three 20mm Flak38s; Gericke's IV/LLStR also had four PaK36s but only two AA guns in Nr. 16 Kompanie. However, Gericke also had four 10.5cm Do-Gerät 38 rocket-projectors in 13.IV, forerunners of the famous Nebelwerfer developed by Walter Dornberger, head of the V-2 project.

The actual battle for Crete was 'a close-run thing'. Because of the failure of German intelligence noted earlier the paras usually found themselves facing superior forces instead of enjoying the local advantage they had anticipated. The Royal Navy's interception of their seaborne convoys denied them the rapid reinforcements they had also expected. It was only an Allied tactical error caused through faulty communications that gave them control at Máleme, but even then the aircraft ferrying Julius Ringel's Gebirgsjäger had to land under artillery fire. However, it was the arrival of the latter that forced the outcome of the ten-day battle. The paras suffered 3,352 officers and men killed, many of them by Cretan partisans who slit the throats of the wounded and others by drowning when nervous Ju 52 pilots gave the signal to jump too early. After this, despite the bestowal of 23 Knights Crosses for the operations at Korinthos and on Crete, Hitler refused to contemplate any further large-scale parachute operations and henceforth the Fallschirmjäger fought as elite line infantry, first in Russia 1941–42 (with a contingent in North Africa) then in Italy after



Generalmajor Eugen Meindl (top) commanded the LLStR until he was wounded. Oberst Alfred Sturm (centre) was given field promotion to Generalmajor and command of 7 Fliieger Division after Süßmann was killed. Oberst Richard Heidrich (bottom), seen with Ludwig Heilmann later in the war at Cassino, took charge at Caneá-Suda.

7 Flieger Division was reconstituted as 1 Fallschirm Division on 1 May 1943. Its men continued to maintain the hard-won traditions they had established during the blitzkrieg era to the end, being regarded by the Allies as both amongst the toughest and most tenacious of their foes, as well as the most chivalrous. The division's remnants under their final CO, Karl-Lothar Schulz, finally surrendered at Imola in May 1945.

7 FLIEGER DIVISION AND LUFTLANDE-STURM REGIMENT, CRETE, 20 MAY 1941

Generalleutnant Wilhelm Süßmann and Generalmajor Eugen Meindl

GRUPPE WEST: FIRST WAVE, 20 MAY: MÁLEME

Generalmajor Eugen Meindl

Luftlande-Sturm Regiment (±)

Stabskompanie (Major Franz Braun)

Fernmeldekompanie (Oberleutnant Osius)

II/LLStR (- 1/ & 2/) (Major Walter Koch)

3/ (Oberleutnant Wulf von Plessen)

4/ (Hauptmann Kurt Sarrazin)

III/LLStR (Major Edgar Stentzler)

5/ (Oberleutnant Herterich)

6/ (Oberleutnant Pissin)

7/ (Oberleutnant Barmetler)

8/ (Oberleutnant Reinhardt)

Kampftrupp 'Mürbe' (Leutnant Peter Mürbe)

III/LLStR (Major Otto Scherber)

9/ (Hauptmann Rudolf Witzig)

10/ (Oberleutnant Schulte-Sasse)

11/ (Oberleutnant Jung)

12/ (Oberleutnant Gansewig)

IV/LLStR (Hauptmann Walther Gericke)

13/ (Oberleutnant Sauer)

14/ (Hauptmann Kiesel)

15/ (Oberleutnant Dobke)

16/ (Oberleutnant Hoefeld)

7 Flieger Division (elements)

3/Fs-Sanitäts-Abteilung 7 (Dr Siebert)

4/Fs-Sanitäts-Abteilung 7 (Dr Steidel) (Airlanded 22 May)

4/ & 12/FJR 1 (Leutnant Kiebitz & Oberleutnant Vossage)
(Dropped 21 May)

II/FJR 2 (-) (Oberleutnant Klein) (Elements dropped 21 May)

GRUPPE MITTE: FIRST WAVE, 20 MAY: CANEÁ/SUDA

Generalleutnant Wilhelm Süßmann

7 Flieger Division (-)

Stabschef: Major i.G. Graf von Üxküll

Fallschirmjäger Regiment 3

Oberst Richard Heidrich

Stabskompanie (Oberleutnant Heckel)

I/FJR 3 (Hauptmann Friedrich Freiherr von der Heydte)

1/ (Oberleutnant Hädrich)

2/ (Oberleutnant Knoche)

3/ (Oberleutnant Straeller-Pohl)

4/ (Oberleutnant Peiser)

II/FJR 3 (Major Helmut Derpa)

5/ (Oberleutnant Staab)

6/ (Oberleutnant Stangenberg)

7/ (Oberleutnant Neuhoff)

8/ (Oberleutnant Böhmeler)

III/FJR 3 (Major Ludwig Heilmann)

9/ (Oberleutnant Heymann)

10/ (Oberleutnant Pagels)

11/ (Oberleutnant Kerstens)

12/ (Oberleutnant Vollquardsen)

13 (Infanteriegeschütz) (Oberleutnant Schimkatt)

14 (Panzerjäger) (Oberleutnant Günther)

Fs-Pionier-Bataillon 7 (- 3/) (Major Egon Liebach)

1/Fs-Pionier-Bataillon 7 (Oberleutnant Adolff)

2/Fs-Pionier-Bataillon 7 (Oberleutnant Tietjen)

1/Fs-Sanitäts-Abteilung 7 (Dr Mallison)

7 FLIEGER DIVISION AND LUFTLANDE-STURM REGIMENT, CRETE, 20 MAY 1941 (continued)

Luftlande-Sturm Regiment (-)

1/1 LLStR (Oberleutnant Alfred Genz)

2/1 LLStR (Hauptmann Gustav Altmann)

II/FJR 1 (Hauptmann Burckhardt)

5/ (Oberleutnant Herrmann)

6/ (Hauptmann Dunz)

7/ (name unknown)

8/ (Oberleutnant Platow)

GRUPPE MITTE: SECOND WAVE, 20 MAY: RÉTIMO

Oberst (with temporary promotion to Generalmajor)
Alfred Sturm

III/FJR 1 (- 12/) (Major Karl-Lothar Schulz)

(4/ & 12/FJR 1 dropped on 21 May at Máleme)

9/ (Oberleutnant Singer)

10/ (Oberleutnant Egger)

11/ (Oberleutnant Becker)

II/FJR 2 (-) (Hauptmann Gerhard Schirmer*)

5/ (Oberleutnant Thiel)

6/ (Oberleutnant Nagele)

7/ (Oberleutnant Zimmermann)

8/ (Oberleutnant Paul)

2/Fs-Sanitäts-Abteilung 7 (Dr Langemayer)

7 Flieger Division (-)

Fallschirmjäger Regiment 2 (-)

Oberst Alfred Sturm

Stabskompanie (Hauptmann Hugo Paul)

I/FJR 2 (Major Hans Kroh)

1/ (Oberleutnant Schindler)

2/ (Oberleutnant Jahnke)

3/ (Oberleutnant von Roon)

4/ (Hauptmann Morawetz)

III/FJR 2 (Hauptmann Wiedemann)

9/ (Oberleutnant Begemann)

10/ (Oberleutnant Semder)

11/ (Oberleutnant Pabst)

12/ (Oberleutnant Hinz)

13 (Infanteriegeschütz) (Oberleutnant Platz)

14 (Panzerjäger) (Oberleutnant Hotze)

TO BE TRANSPORTED BY SEA, 19-22 MAY

3/Fs-Pionier-Bataillon 7 (Leutnant Häffner)

Fs-Artillerie-Abteilung 7 (Major Bode)

Fs-Panzerjäger-Abteilung 7 (Hauptmann Schmitz)

Fs-MG-Bataillon 7 (Hauptmann Schulz)

Fs-Flak-MG-Bataillon 7 (Hauptmann Baier)

*Took over II/FJR 2 when Pietzonka was injured at Korinthos.

GRUPPE OST: SECOND WAVE, 20 MAY: HERÁKLION

Oberst Bruno Bräuer

7 Flieger Division (-)

Fallschirmjäger Regiment 1 (-)

Oberst Bruno Bräuer

Stabskompanie (Hauptmann Rau)

I/FJR 1 (- 4/) (Major Erich Walther)

1/ (Oberleutnant Götte)

2/ (Hauptmann Gröschke)

3/ (Oberleutnant von Brandis)

Tactics

The question posed by Benjamin Franklin quoted in the first paragraph of this book provides the starting point for any discussion of airborne tactics, German or Allied. No country can afford the manpower or weapons to defend every possible target against airborne assault, nor can sufficient mobile reserves be kept on constant standby to mount a rapid counterattack. Similarly, Liddell Hart argued that there was always an unexpected time, place or means to strike at an enemy, even though he was not thinking about paratroops but more of Rommel's inspired tactics during the battle of Caporetto in 1917. Amongst other ideas of his own, though, the Englishman stressed the need for reserves to be used to reinforce success rather than bolstering units that were struggling, which was often the conventional approach. The Fallschirmjäger exploited all these concepts to the full, using that unexpected approach to gain the advantage of surprise and secure what they anticipated would be at least a temporary local superiority. Generally, theory proved correct and when things did go wrong it was largely due to faulty intelligence resulting in the opposition being stronger or more wide awake than expected, to unseasonal weather, to poor navigation or to failures in radio communications.

However, logistics were a fifth problem. The principal parachute in use during 1940–41, the RZ16, was weight-limited to 85kg. Any more than that and the risk of injury on landing increased logarithmically. The greater part of the Fallschirmjäger arsenal had therefore to be delivered to them separately in lightweight containers that carried weapons, ammunition, radios, medical supplies and everything else necessary for the first phase of the assault. Each container had a compressible base to minimise damage to the contents through impact with the ground. They were brightly colour-coded to show their contents and assist retrieval, but the wind could float them behind enemy lines and the Fallschirmjäger sometimes found their own weapons being turned against them.

The same problem of wind obviously affected the men themselves, and they could also find themselves widely dispersed so more time was wasted while they reassembled their squads and platoons, usually under fire. To minimise this problem the Fallschirmjäger dispensed with the type of ripcord-operated parachute issued to aircrew and used static lines which automatically opened their 'chutes by the time they had fallen 25m. This meant that they could be dropped safely from as low as 90m, reducing the time spent dangling in the air during which they were easy targets for every enemy rifleman in sight. Even so, falling at an average of 6m/sec once the 'chutes were fully deployed left them exposed for some ten long seconds. The low altitude meant that there was no possibility of opening a reserve 'chute if the main one failed, so the men were not issued with them. However, since each Jäger packed his own parachute they accepted the smaller risk in preference to jumping from a greater height and setting themselves up as sitting ducks. They exited at one-second intervals, which meant that in still air conditions they landed about 15m apart. This was an ample safety margin but could still result in a 'stick' of 12 men being spread along nearly a 200m line on landing.

One question often asked is why the Germans always dropped their paras in daytime rather than using the cover of darkness to increase the element of surprise and avoid fighters and flak, as the Allies did later. Part of the answer lies in the above equation – the darkness would at least have trebled the reassembly time as well as increasing injuries through misjudged landings. Of equal importance was the basic imprecision in the Ju 52 navigator's ability to locate the target accurately



Men of Hans Kreysing's Infanterie Regiment 16 hasten to relieve Fallschirmjäger who appear to be completely unconcerned on the outskirts of Rotterdam. Kreysing was awarded the Ritterkreuz and later commanded 3 Gebirgs Division, then XVII Armeekorps, in Russia, ending the war as General der Gebirgstruppe.

even in daytime unless the sky was sufficiently cloudless to permit ground fixes. Using 'dead reckoning' alone – in other words, flying on instruments along a preset course adjusted for the strength and direction of the wind – an aircraft in 1940 would drift around 7km for every 100km flown. This was obviously of no use for a precision attack. The Germans did have two fairly accurate radio navigation aids in use at this time, codenamed 'Knickebein' and 'Lorenz', but their use was restricted to specially trained bomber crews. For these simple reasons the paras did not even practice night drops during training or exercises.

However, because the Luftwaffe generally enjoyed aerial supremacy during May 1940, while the skies were entirely devoid of enemy aircraft over Crete, the Fallschirmjäger were not overly worried about fighter opposition even in broad daylight. Flak was an entirely different matter, for which reason the paras' principal targets after hitting the deck were AA gun positions. Getting rid of these would safeguard their comrades in following waves of aircraft and clear the way for the airlanding troops to reinforce them. Other prime targets during assaults on airfields were always the control tower, radio room and telephone exchange. With these quickly in their hands, the paras could not only curtail the frenzied cries for help, but turn the equipment around to guiding following flights of aircraft more accurately to their targets.

In an attack on a bridge, flak suppression was still vital but even more so was cutting the wires to any demolition charges, followed by removing those charges so they could not be set off accidentally. The next priorities were mopping up surviving enemy infantry, then zeroing the mortars in on any artillery pieces within line of sight range. Concurrently, roadblocks had to be set up to delay if not halt counterattacks. Since the paras were already deep within enemy territory, such attacks could come from either end of the bridge, which meant that ideally they had to be seized simultaneously from both sides. In doing this the paras were effectively reversing the tactical principle of Kesselschlacht – 'cauldron battle' – in which the enemy is surrounded, forcing him to counterattack in order to break out. The encircling forces, the original attackers, thus have the advantage of position normally conferred on the defender. By securing a target, whether airfield or bridge, the Fallschirmjäger deliberately invited counterattack, sucking in enemy reserves that might otherwise have been deployed in blocking the ground forces

racing to relieve them. The accompanying maps and text briefly illustrate a selection of Fallschirmjäger techniques in practice.

Waalhaven and Rotterdam

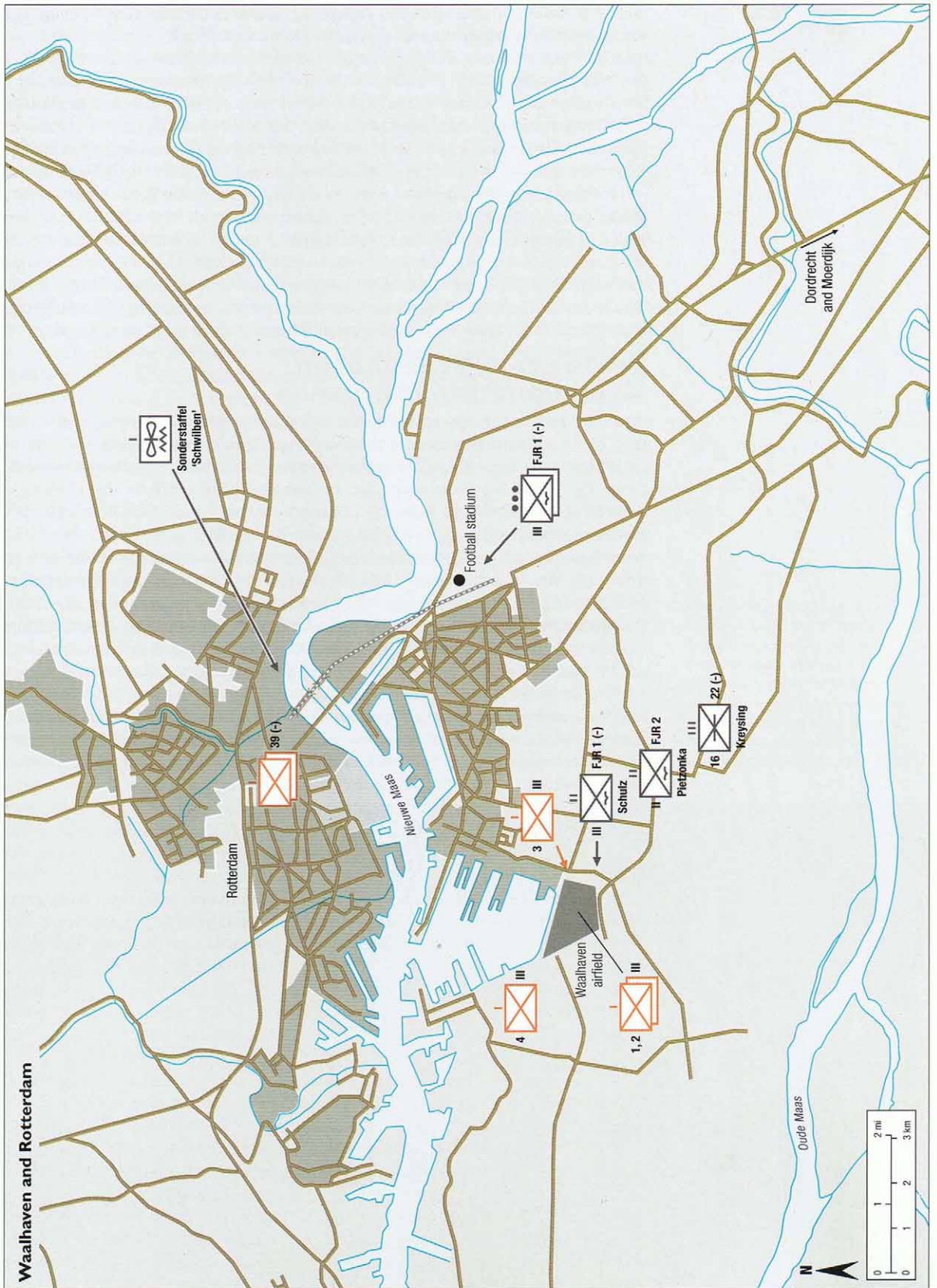
The Fallschirmjäger were highly imaginative in their adaptation of tactical ideas, constantly dreaming up new schemes that, in this instance, would have done justice to a James Bond movie. The capture of Rotterdam was considered vital to take Holland out of the war quickly and prevent Belgian and French forces moving north in sufficient strength to become a nuisance to Armeegruppe B. Fortunately, the city was only lightly defended by an anti-aircraft regiment and a handful of infantry companies because three of the Dutch Corps were deployed to the east with one in reserve around Den Haag.

In Rotterdam, uniquely, elements of 22 Luftlande Division were deployed in the initial assault phase instead of as reinforcements. A specially trained group of 120 volunteers from 22 Pionier-Bataillon and 11.III/IR 16 under Leutnant Schrader was tasked with the capture of the four bridges over the river Maas in the heart of Rotterdam. Neither parachutes nor gliders could be used in such a heavily built-up area so it was decided to use the river itself as an LZ for 12 He 59 floatplanes from Staffel 'Schwilben', each of which carried six dinghies for air-sea rescue work. They landed either side of the bridges close to the north bank. Schrader's main task was to establish a strong defensive perimeter here, relying on the premise that Dutch troops to the south would be sucked into the battle at Waalhaven. However, such a tiny force could not be expected to hold out for long so they were reinforced by two platoons of Fallschirmjäger from Schulz's III/FJR 1 who dropped in the Feyenoord football stadium to the south-east and rushed to their aid. The paras commandeered tramcars for the last leg of their journey! As it turned out, the opposition only consisted of two companies from the Dutch 39e Infanterie Regiment, which mounted several spirited counterattacks from the north without success.

The He 59s landed at 0500hrs, at the same time as the bulk of III/FJR 1's parachutes were blossoming over Waalhaven. Schulz and his men dropped on the eastern edge of the airfield and fanned out rapidly. One AA battery was still firing, despite the attentions of Luftwaffe fighters and bombers, and took several minutes to subdue. The opposition here mainly came from two companies of III/Jäger Regiment detached from 1e Divisie. Then three truckloads of Jäger from a third company which had been blocking the main road into the city arrived, but were caught in crossfire, because by this time Schulz's machine-gunners were deployed. A fourth Dutch company remained in place guarding the harbour installations. The rest, as they say, is history, even though the Dutch Navy sent warships up the Maas estuary to shell the German positions. The Luftwaffe soon dealt with them. Schulz's battalion was speedily reinforced by Pietzonka's II/FJR 2 plus Götzel's anti-tank guns, Schram's artillery and Dr Neumann's medics, which airlanded along with Kreysing's main force of IR 16 from 22 Luftlande Division. By nightfall most of southern Rotterdam was in German hands and they soon linked up with the small task force at the bridges. Shortly the Panzers would arrive, but first they had other bridges to cross.

Dordrecht and Moerdijk

To the east and south of Rotterdam the Maas is over a mile wide in places, presenting an insuperable barrier to the Panzers unless the road and rail bridges at Dordrecht and Moerdijk could be captured intact. These tasks were entrusted to Walther's I/ and Prager's II/FJR 1 respectively. Success at Moerdijk in particular was strategically important because it would essentially split the Netherlands in two and prevent any Allied reinforcements rushing north to interfere in the capture of Rotterdam. The operation here, as everywhere else, began just as dawn was breaking at 0400hrs with intensive Luftwaffe attacks on flak positions either side of the daunting stretch of water. Two of Prager's companies dropped north



Waalhaven and Rotterdam

and two south of the Moerdijk bridges at 0500hrs, rapidly overrunning the surviving flak installations and using the Dutch troops' own sandbags to build their perimeter defence. Red flares were fired to alert the Luftwaffe to the fact that the bridges were now in friendly hands and that the aircraft should drop their bombs elsewhere. Counterattacks by the Dutch 6e Rand Bataljon (Border Battalion) were fairly easily repulsed. At this point the Allies could probably have recaptured the bridges easily, because a motorised column from the French VII Armée was only a few miles south at Breda. However, their CO, Général Giraud – still thinking in World War I fashion – decided to 'seal off' the incursion by splitting his force east and west. The first group ran smack into 9 Panzer Division, which brushed it aside, and the second hurriedly pulled back towards Antwerp. At Dordrecht to the north events did not run quite as smoothly. The initial drops by Walther's I/FJR 1 were successful, but the battalion was understrength so the Dutch 1e and 2e Lichte (Light) Regiments succeeded in retaking the rail bridge from Brandis's 3.I/FJR 1 until Student sent reinforcements south from Waalhaven.

Veldwezelt, Vroenhoven, Canne and Eben Emael

Apart from Armeegruppe A's Panzer assault through the Ardennes and the race to the Channel coast, Sturmabteilung 'Koch's' achievements south of Maastricht have been more extensively written about than any other part of Fall Gelb. The actual forces involved are enumerated earlier. Where this operation differed specifically from those in Denmark, Norway and Holland was in the first deployment of gliders. As the section on the DFS 230 shows, these had several advantages over parachutes, but the principal one was their accuracy in delivering the Fallschirmjäger right on the doorstep of their targets – within a 40m circle in fact. Their pilots only had to navigate some 25km and in May 1940 the skies were clear and the landscape sunlit apart for some light ground mist in river valleys. Student would have liked to use gliders in Holland, but Gothaer's production of the DFS 230 was limited so all the available machines of Kiess's 17./KGzrbV 5 went to the Sturmabteilung.

The German side of the story of the assault on the fortress of Eben Emael by Witzig's Pioniere is well known; the other side has been neglected. The Albert Canal was only lightly defended because Belgian strategists had decided upon merely fighting a delaying action here while falling back on a line Antwerp–Leuven–Wavre to await French reinforcements. Confusingly, Eben Emael itself fell within the jurisdiction of I Corps to the north, but its garrison consisted of two battalions – 1,322 men – from the Régiment de Fortesse de Liège under Major Jean Fritz Lucien Jottrand that was answerable to III Corps in the south. Moreover, the men were reluctant troops who regarded their incarceration as tantamount to imprisonment. To preserve an element of morale, the battalions were rotated and even though a general alert was sounded at 0040hrs on 10 May, half the garrison was still asleep in the barracks outside the fort or in billets in local houses when the attack began. The second battalion CO, Major Van den Auwera, managed to scrape up two platoons for a counterattack while a company based in the village of Wonck under Capitaine Hotterman hurried to their assistance. Pinned down by the ever-present Stukas, they were unable to make any headway and Witzig's capture of the plateau prevented the Belgian 75 and 120mm guns being turned on the attackers at the three bridges over the Albert Canal to the north.

First to land at 0519hrs were the DFS 230s of Schacht's Gruppe 'Beton' at Vroenhoven, where the bridge carried the main Maastricht–Bruxelles road. Landing on the western bank of the canal, they had little trouble subduing the opposition who were dug in facing the wrong way, while one man charged into the command bunker to rip the wires from the electrical demolition box connected to explosives beneath the bridge. Schacht radioed 'mission accomplished' at 0530hrs. The Fallschirmjäger lost just seven men. To the

north of Vroenhoven at Veldwezelt on the Maastricht–Antwerp road, Altmann's Gruppe 'Stahl' landed at 0524hrs and the story was similar. One stubborn machine-gun bunker had to be taken out with grenades and Altmann lost eight men, but at 0535hrs he was also able to radio 'objective achieved'. Canne was a different matter. Here, on the Maastricht–Liège road, the defenders had been alerted by the earlier landings and Gruppe 'Eisen' came under a hail of fire. Schächter was badly wounded and Leutnant Joachim Meissner promptly assumed command. The Belgians also succeeded in blowing the bridge, which was to have provided the overland route for 51 Pionier-Bataillon to relieve Witzig's men at Eben Emael, forcing them to use rubber boats instead. Meissner's men bore the brunt of Belgian counterattacks by Lieutenant-Colonel G. H. Deraymaeker's 2ème Grenadiers throughout the day, incurring 22 fatalities before being relieved by advance elements of IR 151 from Generalleutnant Siegfried Haenicke's 61 Infanterie Division at dusk.

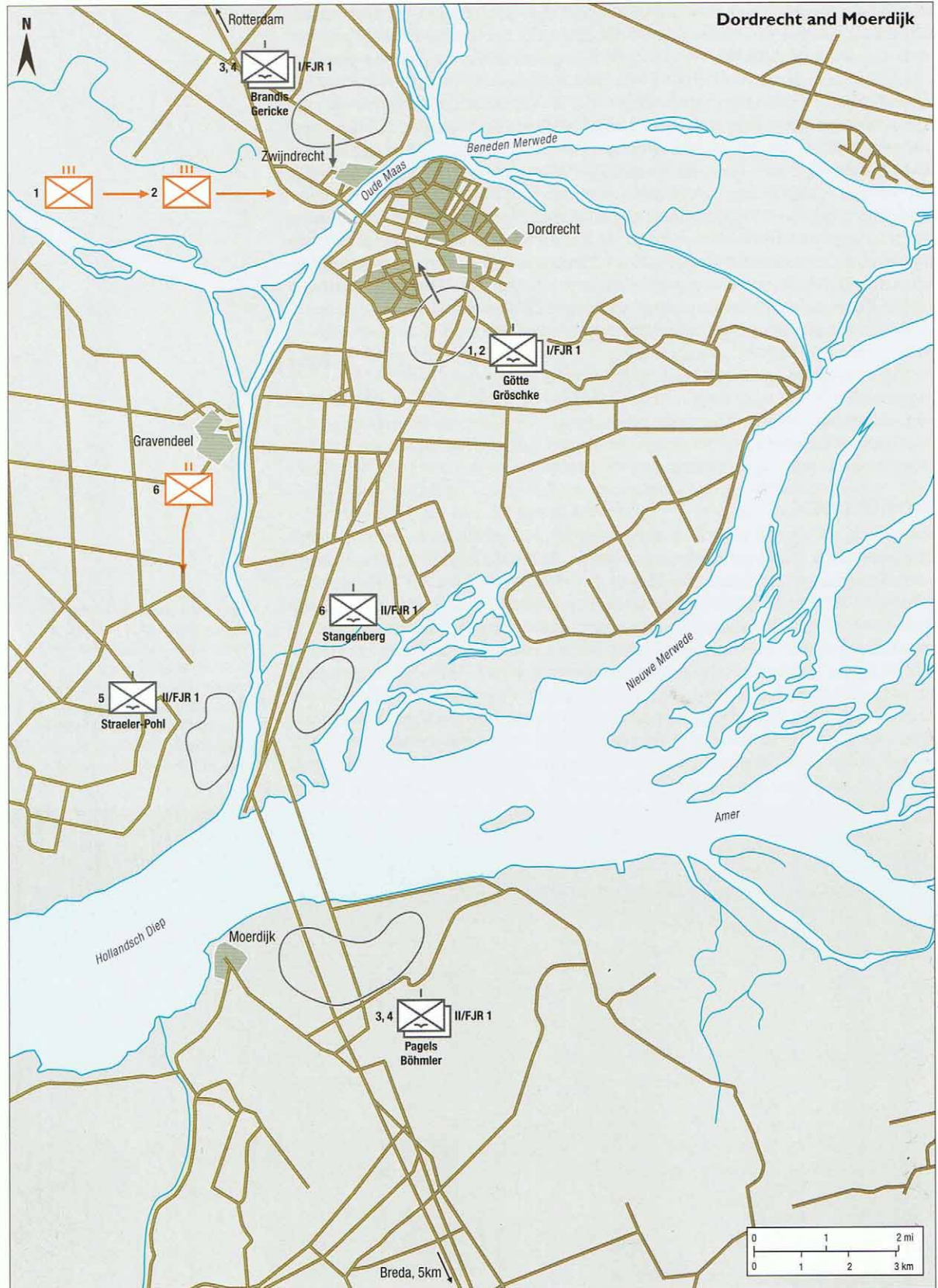
Each of these operations illustrate in particular the quality of the airborne forces' training in their adherence to the principle of Auftragstaktik, their ability to respond quickly to changing circumstances, their leadership quality at junior levels and their high morale. Their low casualties are a reflection of all this. However, so far they had only really encountered opposition from relatively low-grade garrison troops, and their subsequent encounters a year later were to make far more stringent demands.

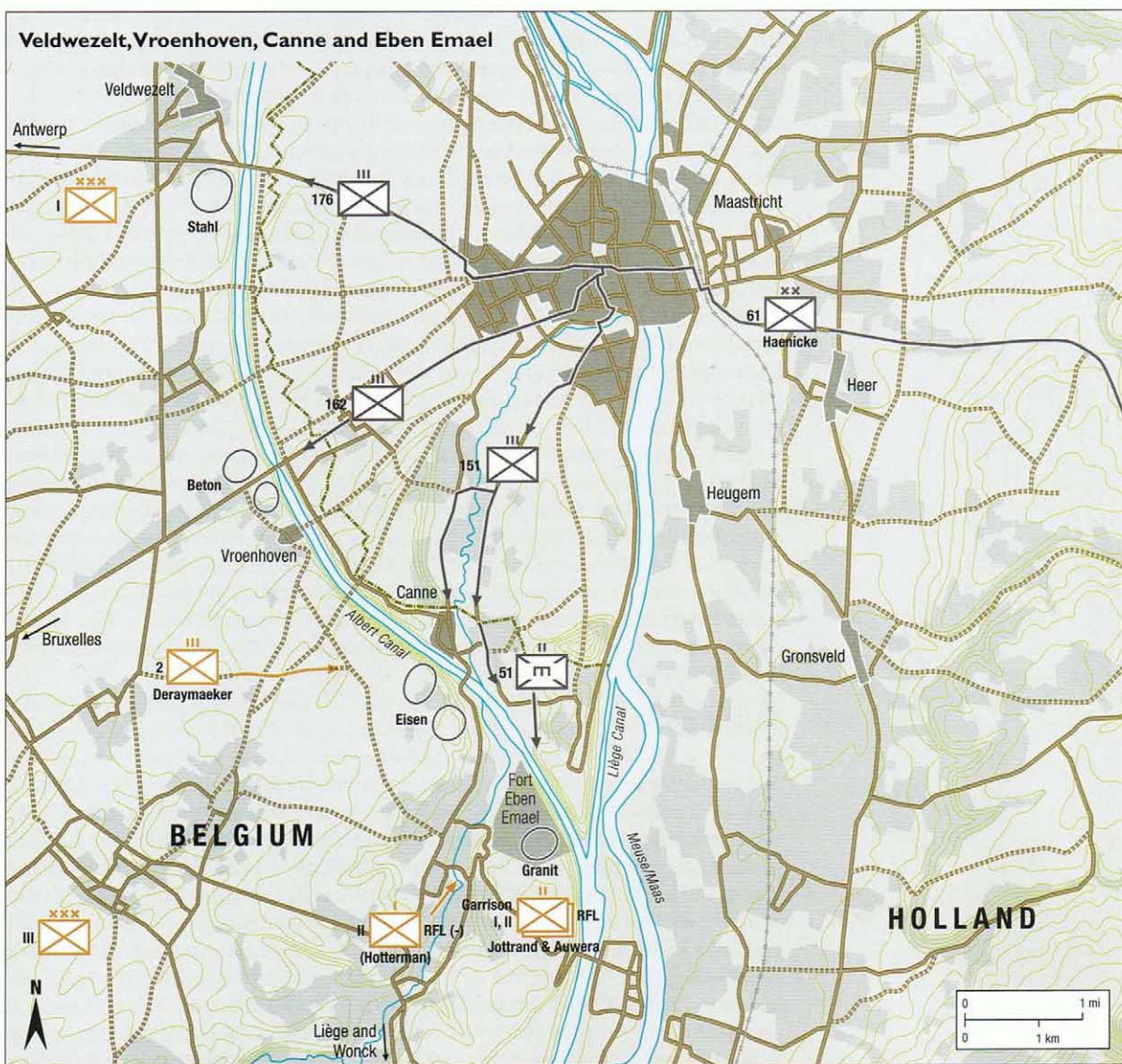
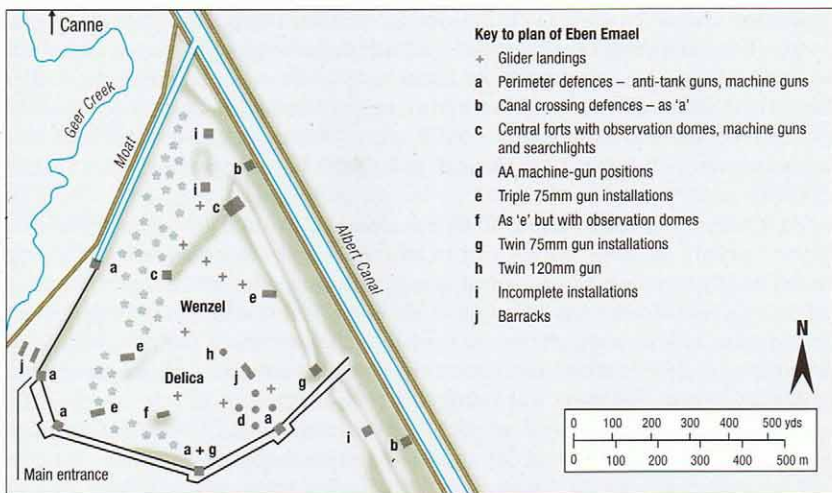
Korinthos

When the Germans launched their assault out of Bulgaria and through Yugoslavia into northern Greece on 6 April 1941, the bulk of the Greek Army was still fighting the Italians in Albania and was quickly cut off and forced to surrender. The only remaining opposition to a triumphal procession into Athens came from the 50,000-strong Anglo-Anzac expeditionary force commanded by Lieutenant-General Sir Henry Maitland Wilson which conducted a controlled and skilful retreat south, throwing up blocking positions in the valleys the Panzers had to use at Mount Olympus and then Thermopylae. Meanwhile, a fleet of ships was assembled at the naval base of Suda Bay on Crete to evacuate them. Hitler could see this prize slipping out of his grasp as at Dunkerque and Narvik, and on 20 April – his 52nd birthday – conceived a plan, codenamed

One of the gun emplacements at Eben Emael after Witzig's Pioniere had completed their work. Although this is a well-known photo, what is not often said is that the original was taken by Oberfeldwebel Helmut Wenzel who carried his camera slung alongside his binoculars!







Operation Hannibal, to cut off their retreat at Korinthos. Here, the precipitous gorge of the shipping canal separates Attica from the Peloponnesus, and there was only a single bridge spanning it. Hitler ordered General der Flieger Alexander Löhr, the commander of Luftflotte 4 who had responsibility for all air operations over the Balkans, to capture and hold it using Oberst Alfred Sturm's FJR 2. The regiment was duly flown from Plovdiv in Bulgaria to the captured Greek airfield at Lárissa on 25 April.

At 0500hrs next day six DFS 230s were hauled into the air for the two-hour flight carrying 54 men mainly from Leutnant Hans Teusen's Nr. 6 Kompanie under the supervision of a squad of Pioniere commanded by Leutnant Häffner. Their task was to render inoperable the demolition charges which British troops were sure to have placed on the bridge. In what was the first combined operation by glider and parachute forces, they were followed by the paratroops of Kroh's I/ and Pietzonka's II/FJR 2, who were flown in 272 Ju 52s to drop north and south of the canal respectively. Wiedemann's III/FJR 2 was held in reserve to drop the following day and help in the mopping-up.

The airborne armada took a circuitous route through a snowstorm to approach the target from the west and the gliders landed almost without mishap, just one cracking up against a bridge pillar. The men raced out, one group rapidly tearing the explosive charges from the bridge while their comrades gave covering fire – the area was only defended by a mixed company of Australian, British and Greek troops. Inexplicably, the engineers piled the explosives in the centre of the bridge instead of simply throwing them into the canal. What happened next has never been satisfactorily explained either, but the British launched a counterattack during which the demolition charges exploded, destroying the bridge. Different accounts attribute this to the self-sacrifice of two British officers who fired their pistols at point-blank range, or to sniper fire, or to a stray round from one of the Bofors AA guns still firing. The truth will certainly now never be known.

Moments later the Ju 52s carrying the balance of the two parachute battalions roared overhead, guided by the huge column of smoke, and a thousand 'chutes blossomed in the air at 100m. South of the bridge, Pietzonka broke a leg on landing and surrendered command of II/FJR 2 to Hauptmann Gerhard Schirmer. The men of Nr. 5 Kompanie quickly knocked out the 11 remaining operational Bofors. On the north bank, Kroh's men deployed to give further covering fire while some of Schirmer's men headed into Korinthos town itself, using captured Bren Gun carriers. The destruction of the bridge still achieved half the German objective of trapping many of the Allied troops still in Attica, but denied them the opportunity of pursuing those already in the Peloponnesus until new temporary pontoon bridges were constructed at Posidhonia and Isthmia where the canal banks were lower. German losses were 63 killed, 16 missing and 174 wounded, the majority incurred during the explosion.

Máleme

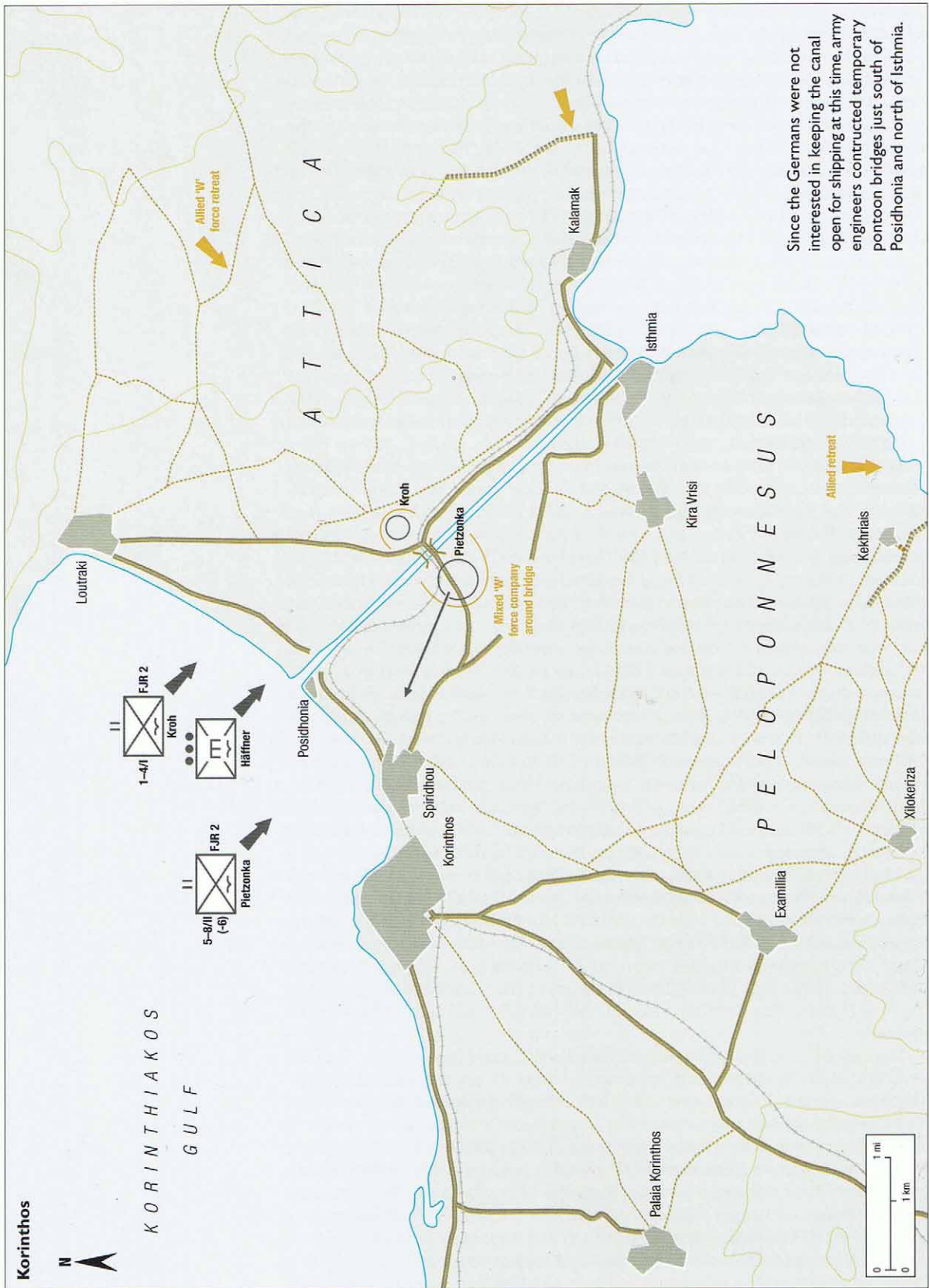
Following the Greek surrender and the remarkably successful evacuation of over 41,000 men from 'W' Force to Crete and Egypt, Hitler was persuaded that the island had to be seized to prevent its three airfields being used for bombing raids against Ploesti. The result was the first combined glider, parachute, airlanding and amphibious operation attempted in history. A full description of Operation Merkur (Mercury) is far beyond the scope of this volume so the following is just a sketch of the first crucial hours at Máleme, the primitive airstrip on the north-west coast whose capture was the key to the success or failure of the entire venture. Planning was rushed because the island had to be captured quickly so that the fighters and bombers of VIII Fliegerkorps (Fig. 22) could be released for the attack on Russia. Sheer logistic problems slowed things down, though, and 'Der Tag' had to be postponed twice before

the date was finally settled: 20 May. Student's XI Fliegerkorps lacked sufficient aircraft to carry all the men of Süßmann's 7 Flieger Division even in two waves – all that were possible in one day even discounting losses – let alone those of Generalmajor Julius Ringel's attached 5 Gebirgs Division (Fig. 23). Some would have to travel by sea in commandeered Greek vessels, plus most of the artillery and, as originally planned, 5.II/31's PzKpfw IVs from 5 Panzer Division. In the event, the first convoy was intercepted by the Royal Navy, the second was turned back and the third did not set sail until much later, so the men had to be airlanded anyway over succeeding days.

Opinions about the tactics to be employed differed. Alexander Löhr favoured concentrating everything around Máleme and the island's administrative capital, Caneá, followed by a conventional infantry sweep along the 160-mile length of the island – a view later endorsed by Kesselring because it would have allowed VIII Fliegerkorps to give concentrated fighter and bomber support. Student, however, objected that this could result in a long campaign through the mountainous and virtually waterless terrain, with only one halfway decent road, during which time the British might themselves be able to airland reinforcements at the other airfields of Rétimo and Heráklion. In the end he won his way, and the restructuring of his forces into three groups and two assault waves is shown in the 7 Flieger Division section.

The assault at Máleme by Gruppe West was spearheaded by the LLStR commanded by Generalmajor Eugen Meindl. The target was dominated by Kavkazia Hill and delineated on its west side by the dried-up bed of the river Tavronitis. The initial glider landing at 0715hrs, following intensive Luftwaffe softening-up, was by Oberleutnant Wulf von Plessen's 3.I/LLStR at the mouth of the river, its objective an AA battery. This was quickly overrun but von Plessen was killed. Minutes later, Hauptmann Kurt Sarrazin's 4.I/LLStR's gliders landed just south of Kavkazia Hill. The battalion CO, Walter Koch, accompanied them but was wounded almost immediately, and Sarrazin was killed shortly afterwards. Major Franz Braun's Stabskompanie landed around the bridge over the river bed; Braun was also killed almost immediately. (Koch's 1 and 2 Kompanien were assigned to Gruppe Mitte.) The gliders were followed by the first paratroops of Oberleutnant Osius's Fernmelde Kompanie who dropped west of the river, followed quickly by Hauptmann Walter Gericke's IV/LLStR accompanied by Meindl whose task was to reinforce Braun and Koch. Meindl and his adjutant, Oberleutnant von Seelen, were badly wounded and, because Koch was also out of action and Braun dead, command was temporarily assumed by Dr Heinrich Neumann, the senior surviving officer. Meanwhile, Major Edgar Stentzler's II/LLStR dropped further south to form a blocking force against Allied reinforcements rushing north. Seventy-two men from his command under Leutnant Peter Murbe were dropped miles to the west to seize the unfinished airstrip at Kastelli Kissamos and suffered horribly at the hands of Cretan partisans. Finally, Major Otto Scherber's III/LLStR intended to drop into the village of Máleme itself to attack the airfield from the east but most men landed in the middle of the New Zealand 23rd Battalion and Scherber was killed too, along with most of his men.

The principal opposition at the airfield itself came from the New Zealand 22nd Battalion. For many hours, until the next day in fact, it was touch and go. The paras secured the north-west and south-west of the airfield but murderous machine-gun, mortar and artillery fire continued to inflict heavy casualties and they were unable to make any impression against Kavkazia Hill. Fortunately, the turrets of the two Matilda tanks which attempted a counterattack jammed, and unlikely help was about to come from the enemy himself. The CO of the 22nd Battalion, Lieutenant-Colonel Leslie Wilton Andrew, VC, had lost contact with two of his companies, his radio link to 5th Brigade HQ eventually failed completely, he had not received the expected support from the 23rd Battalion because it already had its hands full, and after nightfall he ordered his men to fall



Since the Germans were not interested in keeping the canal open for shipping at this time, army engineers constructed temporary pontoon bridges just south of Posidhonia and north of Isthmia.



Some of the weapons containers included a small pair of wheels and a towbar, allowing them to be transformed into light handcarts, as here on Crete.

back. The two companies he believed had been overrun were, in fact, still holding out, but when they lost contact with battalion they pulled out too. Next morning the astonished Fallschirmjäger were able to walk almost unmolested on to the hill and shortly afterwards Ju 52s began landing badly needed reinforcements, 550 men principally from 4. and 12./FJR 1 plus a composite company of other men who had been left behind. Command at Máleme was assumed by Oberst Bernhard Ramcke until the arrival of Generalmajor Ringel and Ju 52s began airlanding the first mountain troops even while British artillery was still pounding the runways. Kurt Student himself flew in on 23 May to assume overall command. Thereafter, tactics reverted to those originally proposed by Löhr and, although the battle for the island would last another week, to all intents and purposes it was already won.

Weapons and equipment

The introduction of a radical new type of weapon, such as the German airborne corps itself was, can obviously influence the whole character of warfare in many different ways. However, even though the Fallschirmtruppe themselves can correctly be viewed as a revolutionary rather than an evolutionary new type of weapon, in terms of their own armament and other equipment it was usually the demands of their mission that dictated development, not the other way around, so in the early days tactics were circumscribed to a degree by the weapons then in existence.

This was no major disadvantage in most respects because their opponents' weapons during this period were largely similar, and by the time the Fallschirmjäger did begin receiving better, their airborne role had all but been taken away. The only real difference between themselves and the line infantry – German or otherwise – was that they had a novel means of transport to the battlefield. The Fallschirmtruppe did not have superior armament except in one important respect: a much higher proportion of automatic weapons that were also better designed than most of their opponents'. Against that, they only had limited ammunition until relieved, their artillery was far weaker and less than ideal for its intended role, and they possessed little organic air-portable ground transport so mainly had to rely on captured vehicles if they needed any. Since the airborne troops were essentially light infantry – even though 22 Luftlande Division was not classified as such – it is appropriate to look at this aspect of the two German divisions' weapons and equipment first before turning to their heavier hardware.

In one respect, the Fallschirmjäger in 7 Flieger Division did have some specialised kit that had been premeditated and introduced specifically for them before they were committed to battle, although the men of 22 Luftlande Division did not. The paras had tightly lacing ankle boots instead of marching boots, and padded brimless helmets instead of the conventional Stahlhelme. They wore windproof one-piece jump smocks over their Luftwaffe uniforms; they had knee pads and supple leather gauntlets to protect them from the abrasive shock of landing virtually face-first; and they even had a special 'gravity knife' carried in their right thigh pocket which could be opened single-handed and used to cut themselves free from tangled lines on landing.

The design of the first-pattern jump smock, unfortunately, had not been thought through properly and this adversely affected combat effectiveness. The garment had short integral legs that the paras had to step into before shrugging the top half over their shoulders and their arms into the sleeves. The parachute harness and pack were strapped on top of this. Unfortunately, once on the ground the men not only had to unbuckle their harnesses – which had no quick central locking mechanism – but then had to shed the top half of their smocks in order to get at their equipment belts with their pistols, bayonets, water bottles and ammunition bandoliers. Because the smocks' pockets carried

A junior Jäger officer in full combat gear including mud-smeared helmet, second-pattern jump smock, MP40, 'stick' grenade, map case and binoculars. There will also be a pistol on his left hip.





An NCO of the 'Hermann Göring' Division in SS camouflage, about to fire a Walther Leuchtpistole.

grenades, loose ammunition, first aid kit and other small items, the men then had to pull them back on. Although their grey-green colour also helped camouflage the paras' blue Luftwaffe tunics with bright yellow Waffendarbe, it was a process that wasted precious seconds which could and did prove fatal. By 1940, therefore, second-pattern smocks were already in service although few men received one in time for the invasion of the west. These lacked the 'legs' of the earlier design and fastened all down the front and then around the thighs, as well as being produced in even more practical disruptive pattern camouflage.

Just as with the first-pattern smock, the design of the RZ16 parachute in use throughout 1940–41 had defects that influenced the men's performance. If, as a child, you ever attached a toy soldier by cotton threads to the corners of a handkerchief and threw it into the air, you will understand the problem the Fallschirmjäger faced. They were as helpless during their descent as that toy soldier because they were suspended from the canopy by two ropes from between their shoulder blades converging into one umbilical connected to the actual shroud lines. This, as well as the lack of a quick-release device until the

introduction of the RZ20 just in time for the invasion of Crete, was a serious design flaw that really did affect the Fallschirmtruppe in carrying out their missions, because they could drift far off course with disastrous results. On top of this, infantry weapons larger than pistols and hand grenades were all intended to be landed in the brightly coloured lightweight containers already mentioned, but these could not be steered either and it consumed further precious time to retrieve them.

To most soldiers, a pistol is usually the last means of defence, something to be used in an emergency. To the German paras, however, it was the first line of defence before they could reach a container, and every Jäger carried one because it was also the only firearm that could be worn safely under the jump smock during a drop. These factors were, however, recognised early in planning, so Göring appropriated almost the entire production of the 7.65mm Sauer Modell 38H self-loading pistol for the Luftwaffe. This remained virtually standard amongst the paras, alongside a sprinkling of old but prized 9mm Luger P08s, until sufficient quantities of the much more powerful and accurate 9mm Walther P38 became available. One other pistol was particularly important to all the airborne troops: the 27mm Walther Leuchtpistole, German equivalent of the British Very Pistol. This smoothbore, single-shot weapon fired flares of different colours to demarcate their DZs and LZs and, hopefully, prevent the supporting fighters and bombers attacking them by mistake. The flares also provided useful markers indicating wind strength and direction for succeeding waves of Ju 52s.

A weapon which could have been purpose-designed for the paras was the 9mm Erma (not Schmeisser) MP38 and '40 sub-machine gun. Nor did the Fallschirmjäger encounter opponents having anything comparable until they met the Russians. The Belgians, British, Danes, Dutch and Norwegians possessed no indigenous sub-machine guns at all. The MP40 remarkably fulfilled all the criteria needed by the Fallschirmtruppe: a light weight of only 4.7kg; compact size, just 63cm with tubular steel shoulder stock folded; a substantial 32-round box magazine, and the ability to fire single-shot, in short 5–10-round bursts or fully automatic. In the latter mode, however, the gun tended to jam occasionally and, even when it did not, exhausted its magazine

in two seconds so was impossible to aim accurately. The Fallschirmtruppe did find through trial and error, though, that they could carry an MP40 strapped outside their parachute harness or to the left thigh, and during the invasion of Crete in 1941 roughly one man in four chose to carry one this way. Although the MP40 only had an effective range of 200m, the Fallschirmjäger normally expected to be in close contact with the enemy immediately upon landing and the 'hosepipe' effect conferred by the weapon's high rate of fire certainly helped keep their opponents' heads down.

Despite its advantages it was impossible, in view of the demand from other branches of the Wehrmacht and Waffen-SS, to equip every paratrooper with a sub-machine gun. The majority of the men therefore had standard bolt-action 7.92mm Mauser Gew98 rifles or shorter-barrelled Kar98k carbines. Both weapons pre-dated the turn of the century and, although they were well built, reliable and accurate, the mobile battles of 1939–40 revealed shortcomings, particularly in rate of fire, which accelerated the search for something better. Carbines were generally chosen for the Fallschirmtruppe over rifles on the grounds of size and weight. Both firearms had five-round box magazines and could fire up to 15 aimed shots a minute. The rifle with a barrel length of 74cm was accurate to over 1,000m whereas the carbine with a 60cm barrel only had an effective range of 800m. However, combat experience during 1939–40 also showed that even the latter was excessive because most firefights took place at under 400m, so the later Gew41 and '43, and the FG42 and StG44 assault rifles, had even shorter barrels and ranges – but reducing barrel length also had the beneficial effect of allowing a higher rate of fire. As an improvised interim measure the Fallschirmtruppe were issued with small quantities of a modified Czech carbine, the 7.92mm Gew33/40(t). This had a folding stock and a 49cm barrel, but the bruising recoil caused by use of a full-powered cartridge in such a short barrel, and the highly visible muzzle flash, made it very unpopular.

Going up the scale, one of the most outstanding weapons in the airborne forces' armoury during the blitzkrieg period was the 7.92mm MG34 machine gun which contributed enormously to the sheer firepower volume of all the German infantry, enhancing the flexibility, initiative and improvisation that were so stressed in training and so astonished their opponents. Skating quickly over a complicated story, in order to get round one of the restrictions of the Versailles Treaty, Rheinmetall acquired a controlling interest in the neutral Swiss firm Solothurn in 1929. Solothurn in turn produced from German designs the world's first straight-line machine gun as the MG30. It turned out to be too cumbersome for an effective infantry weapon, but could be adapted for secondary defence in aircraft. After a couple of design modifications by Rheinmetall it went into



Jäger in first-pattern smocks during an exercise. The man in the background has a Kar98, easily identifiable from its cavalry-style sling, while the Gefreiter has an MG34; both men wear Sauer pistols.

Offloading a motorcycle and sidecar from the hold of a Ju 52 was an awkward task at best. This photo was actually taken in North Africa in 1942 but the conditions on Crete were similar, especially the heat.



production for the Luftfahrtministerium in 1932 as the 7.92mm Solothurn MG15 using a 75-round saddle-drum magazine. The principal use the Fallschirmjäger found for it was on the DFS 230, pintle-mounted in front of a roof hatch behind the cockpit, from where it could be used to give covering fire to the glider's occupants as they deployed. After that, the gun could be dismantled quickly and attached to a tall tripod for the paras' use as a light anti-aircraft weapon.

When the army turned down the MG15, Mauser were asked if they could improve on it, which the firm did with surprising speed. They shortened the overall length from 133 to 122cm, reduced weight from 12.7 to 12.1kg, added a belt-feed mechanism while retaining the saddle-drum capability and made other small but significant modifications including a quick barrel-change mechanism. The end result went into service as the MG34, which remained in use throughout the war despite being later supplemented by the further-improved MG42.

The MG34 was an air-cooled triple-purpose weapon, capable of being used with a bipod and the 75-round magazine as a light machine gun; with a rigid tripod and linked 50-round ammunition belts in the sustained-fire role; or on the MG15's taller tripod, with the saddle-drum magazine again and fitted with a detachable ring sight, as a light anti-aircraft gun. In all these respects the MG34 was far more advanced and versatile than any of the machine guns used by Germany's adversaries during the early war years and, in fact, retained its superiority to the very end.

The British, for example, had an inefficient division of labour with an entirely different weapon for each role: the cumbersome water-cooled, belt-fed Vickers as a heavy machine gun; the light air-cooled, box-magazine Bren, and the obsolescent pan-magazine Lewis in the AA role. In addition, the MG34 had a far higher rate of fire than any of these, 850 rounds per minute compared to the



An NSU Ketten-Krad half-track motorcycle towing a trailer of supplies over rough ground.

550 of the Lewis, 450 of the Vickers or the mere 90 of the Bren, the latter being so low because the barrel usually had to be changed in order to cool it down after only three magazines of automatic fire. The MG34's barrel had to be changed, too, to prevent warping through overheating, but only after 250 rounds and even then the process took just seconds thanks to the quick-change mechanism.

The MG34 could also be fitted onto motorcycle sidecars, and motorcycle combinations were one of the few forms of wheeled transport that could be airlifted to the Fallschirmtruppe in Ju 52s. Solo motorcycles could be carried easily, of course, but were unarmed apart from the personal weapons of the rider and pillion passenger. Combinations required some sweat and skull-scratching to get in and out of the aircraft, but it could be done. Motorcycles of any sort, with or without sidecars, are not really combat vehicles – their crews are too exposed and vulnerable – so they were principally used by despatch riders, military police and for reconnaissance. What a sidecar combination could do, however, was get to a road junction, for example, before the footsloggers, unship its machine gun and set up a temporary roadblock. A number were used on Crete, but predominantly after the hard fighting was over. The same applied to the NSU Ketten-Krad, a unique little vehicle with a motorcycle front wheel and handlebars, and tracked rear transmission. Introduced specifically for the Fallschirmtruppe in 1940 and, again, used latterly on Crete, it had good cross-country mobility, could carry four men behind its driver, and tow a two-wheel cargo trailer, a 3.7cm PaK36 or a 20mm Flak38.

Lacking any realistic type of artillery piece heavier than these that could be parachuted to them until the emergence of the recoilless guns, which first saw action on Crete, the German paras had to rely solely on mortars (and Stukas, of course) for any form of heavier support during April–June 1940. Each Jägerkompanie included a section with three light 5cm leGrW36s, while the battalion's Maschinengewehrkompanie included a Mörserzug with six medium 8.1cm GrW34s each crewed by four or five men. The former proved in combat to be almost completely ineffectual but Allied battle reports particularly noted the ferocity and effectiveness of the latter. The 5cm weapon fired a 0.89kg bomb to a range of 520m and had a rate of fire of 15rpm, while the heavier mortar shot a 3.4kg bomb to a range of 2,380m at the rate of 12rpm.

The last infantry weapon that must be mentioned is the flamethrower. Tactically, its most important use was against enemy bunkers and pillboxes, as at Eben Emael. The first design available was the cumbersome Flammenwerfer Modell 35, which weighed a backbreaking 35.8kg. By 1940 this had largely been replaced by the Modell 40 in which a substantial weight reduction was achieved,

The full five-man crew of an 8.1cm GrW34 in action on Crete. These were supplemented by four experimental Do-Gerät 38 rocket-projectors in 13.IV/LLstR at Máleme and three in 13.IV/FJRI at Heráklion. The rockets weighed 40kg and had a range in excess of 5,000m.



down to 21.32kg. Both contained sufficient fuel and gas for ten one-second bursts and had an effective range of 20–25m.

For heavier support than machine guns, mortars and flamethrowers, the Fallschirmjäger were poorly equipped to say the least, until 1941. When Leutnant Bruno Schram, a Bavarian Gebirgsjäger and commander of the Infanteriegeschützkompanie 'General Göring', was first asked to form an Artillerie-Versuchszug for the fledgling 7 Flieger Division in 1938, he took up the challenge enthusiastically. Grave misgivings soon crept in because the best weapon then available to his test platoon was the old 7.5cm Skoda GebK15 mountain gun of World War I vintage. Archaic in appearance, with spoked tyreless wheels plus a cumbersome trail and blast shield that restricted elevation to 50 degrees, it could nevertheless fire a 5.47kg high explosive round to a range of 6,625m. Moreover, the whole gun only weighed 630kg and could be broken down into seven separate loads for mule – or parachute – transportation. Schram discarded the blast shield to reduce the number of loads, save even more weight and speed up the time taken to re-assemble the gun. The problem was that the components weighed different amounts so any wind scattered them. The antics of Schram's small command trying to find and put them back together led to the platoon being unkindly nicknamed 'Fallschirmjägers Zirkus Schram' – Bruno Schram's Flying Circus!

By April 1940, with promotion to Oberleutnant and his command enlarged to a full battery of four guns, he had received more modern weaponry in the form of the 7.5cm Rheinmetall-Borsig GebG36, but the nickname stuck because this gun had a disconcerting habit of leaping high into the air when fired at an elevation below 15 degrees. The GebG36 was heavier than the Skoda at 750kg but could be broken down into eight air-portable loads. It only fired a marginally heavier 5.75kg round but had enhanced range of 9,150m because it could be elevated to 70 degrees. When it was first tested in combat in Norway, though, it proved so unsatisfactory that it provoked official protests as well as expletives from its crews and four of the older weapons were airlanded to the paras in Holland the following month. (GebG36s were, however, used by 5 Gebirgs Division on Crete.)

Schram urgently wanted something better than either of these improvised 'Fallschirmgeschütze', but Kurt Student had already foreseen the need and commissioned Rheinmetall to look into ways of providing his paratroops with lightweight guns that could be dropped to them in one load. As director of the Erprobungsstelle für Fluggerät at Rechlin in 1935, Student was already aware of the firm's experiments with recoilless weapons, and in 1937 he therefore asked Rheinmetall to try to develop one for use by paratroops. As was standard practice, other companies were asked to tender for the contract and Krupp

picked up the gauntlet. Rheinmetall called their working prototype the IG1, using the cover name 'light gun' to disguise its real nature, and it went into production in 1940 as the 7.5cm IG40. Krupp, whose rival design lost the competition, then produced a 10.5cm version that was accepted and Schram's 'Flying Circus' was finally in business. The Rheinmetall design only weighed 412kg, the Krupp – which, confusingly, also had the designation IG40 – 544kg, but both could be dropped in one piece from a Ju 52 using a cluster of five parachutes. The former fired a 5.8kg round to a range of 6,800m, while the latter's weighed 14.8kg and could reach 7,950m. Both had an effective rate of fire of 8rpm and were first used in action on Crete in May 1941, where the 10.5cm weapon in particular proved highly effective.

As we have seen, it was only really the riflemen and combat engineers of 22 Luftlande Division, along with signallers and medics, who were intended for the airlanding role. The remainder followed more sedately by road. The division's horse-drawn ordnance was exactly the same as that issued to all other line infantry divisions of the blitzkrieg era: 7.5cm leIG18s and 15cm sIG33s in the infantry regiments, 10.5cm leFH18s in the artillery regiment's three light battalions (and I/158 Artillerie-Bataillon) and 15cm sFH18s in the heavy battalion. Since these played no part in airborne or airlanding operations, their details will be left to another volume in this series. However, 22 Luftlande did share with 7 Flieger Division identical anti-aircraft and anti-tank weaponry, although both were motorised and not used in Holland.

The standard light anti-aircraft gun in 1939 was the 20mm Mauser Flak30, but this only had a rate of fire of 280rpm, which experience during the Polish campaign showed was grossly inadequate. However, work had already begun on an improved design, which was in service as the 20mm Flak38 in time for the April–June 1940 campaigns. This was a huge improvement that not only had a rate of fire of 450rpm but could fire high-explosive, incendiary or armour-piercing rounds. Even though it was in many respects little more than a glorified heavy machine gun, it thus rapidly became a deadly multi-purpose weapon for use against ground forces as well as low-flying aircraft. Because it was small, and lighter than the Flak30 at just 406kg, it could almost have been purpose-built for the airborne corps. On its two-wheel carriage it was small enough in overall dimensions to be carried in the cargo version of the Ju 52 and was air-dropped using cluster parachutes on Crete. Here, because the Allies had not a single aircraft in the sky, it was just used against enemy infantry and artillery positions. In this role, the Flak38 had an effective range of 2,697m. It was usually towed behind a Ketten-Krad and was light enough for its crew to manhandle. While 20mm weapons remained standard within 7 Flieger Division, 22 Heeres-Flak-Bataillon, which joined 22 Luftlande Division in July



A Gebirgsjäger Abfeuren-Batterie with a pair of the obsolescent Skoda 7.5cm GebK15 mountain guns which were first issued to Bruno Schram's Artillerie-Versuchszug. That they were hardly suitable for the airborne role is obvious.

The four-man crew of a Krupp 10.5cm IG40 stand to the side well clear of the venturi as they prepare to fire 'over open sights' at a visible target. Their relaxed demeanour strongly suggests that this picture was taken on manoeuvres.

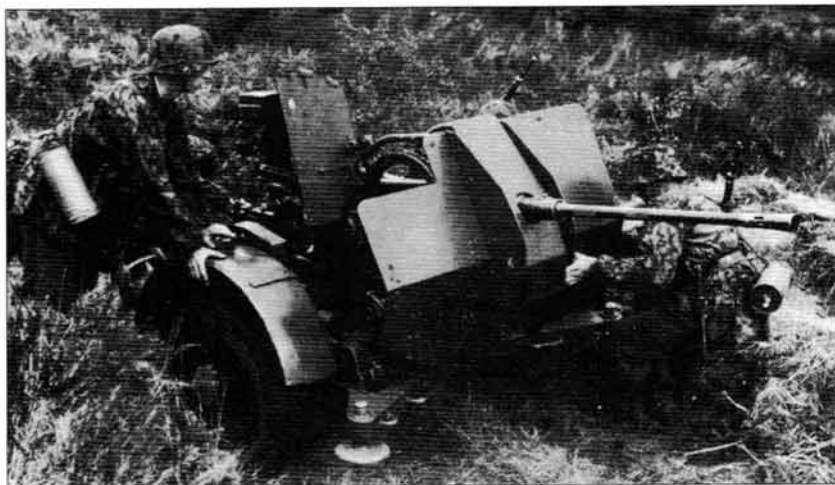


1940, had self-propelled 3.7cm Flak36s mounted on SdKfz 6 half-tracks, but these were not then air-portable.

In terms of anti-tank ordnance, during the 1940 campaigns the German airborne forces had to put up with the only weapons then available: anti-tank rifles or the 3.7cm Rheinmetall PaK36. The former were only of use against light tanks and armoured cars even in 1939, despite which the Wehrmacht continued development until 1941. Prior to this the models available were the 7.92mm PzB38 whose bullet contained a capsule of tear gas designed (unsuccessfully!) to incapacitate the vehicle's crew; and the PzB39 with a solid tungsten-carbide-cored bullet. Both were unwieldy weapons, long-barrelled to give the necessary muzzle velocity and very heavy, so their two-man crews appreciated their demise and replacement by more useful weapons.

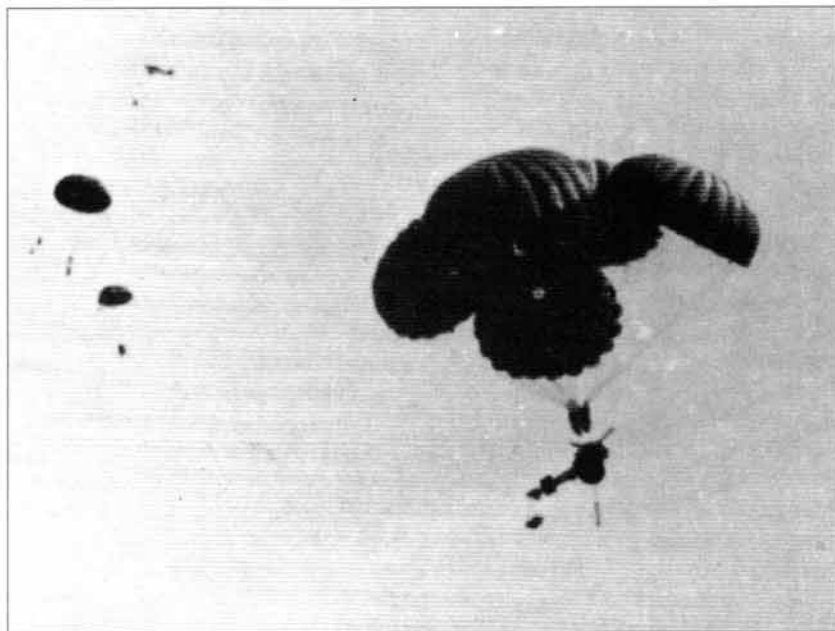
It was a similar story with the PaK36, which had been used with moderate success in Spain and Poland, but was obsolete by 1940 and could barely scratch a British Matilda or French Char B. Its only saving grace was that it merely weighed 432kg so could be parachute-dropped, towed behind a Ketten-Krad and was easily manhandled. Although it was given a fresh lease of life by adapting it to fire the Panzergranate 40 hollow-charge grenade, by the middle of the war it was relegated to training duties.

Fortunately, a much improved 5cm design began entering service in autumn 1940 which, unusually, was given the designation of the contract date: PaK38.



A 20mm Flak38 being manoeuvred into position by two gunners from the Fallschirm-Division 'Hermann Göring', readily identifiable by their use of Waffen-SS camouflage. Despite its name, 'HG' was never a paratroop formation after April 1938 when its Fallschirmschützen-Bataillon became I/FJR1.

This was first used during the Greek and Yugoslav campaigns of April 1941 and a small number were airlifted to the Fallschirmtruppe on Crete, but by the time they arrived the British had run out of tanks. However, the PaK38 – unlike the contemporary British 2-pdr and later 6-pdr – could fire high-explosive as well as armour-piercing shot so could ‘double’ as a light field gun. In this guise it had an effective range of 2,652m and, although the shell only weighed 2.25kg, a semi-automatic breech mechanism gave the gun a high rate of fire of 12–14rpm. Despite being later supplemented by the little parachute-droppable 2.8cm tapered-bore sPzB41 and other far superior weapons such as the 7.5cm PaK40, the PaK38 remained in service with the Fallschirmjäger throughout the war.



Air-dropping a 3.7cm PaK36 to the troops on Crete using a cluster of five parachutes.

Recoilless guns

The mechanism and the operational advantages and disadvantages of these weapons needs a short word of explanation. The conventional Newtonian laws of physics tell us that for every action there is an equal and opposite reaction, so much of the weight in any normal artillery piece is caused by the need for a heavy carriage and shock-absorbing mechanism to take up the recoil. The idea of a recoilless system that would dispense with this requirement was not new, and during World War I the inventor Cleland Davis proved the theory by mounting two gun barrels back to back with a central simultaneous firing mechanism. Even though the countershot was inert, however, it was as lethal as a cannonball to anyone standing behind, so the concept withered until Rheinmetall resurrected it in the early 1930s.

Without going into too much technical detail, by this time the idea of a countershot had been abandoned. Both theory and laboratory experiments had already shown that an object of equal mass and velocity to the live projectile was unnecessary. The same result could be achieved by shooting a mass half the weight at twice the speed. Taking this to its logical conclusion, the German boffins calculated that even this was also redundant because the propellant gas itself could be given sufficient mass if enough of it was expelled backwards at even higher speed. They proved their theory by drilling a tiny hole through the back of a gun's breechblock and making the base of the propellant cartridge of frangible plastic which shattered when the gun was fired. Part of the expanding gas propelled the projectile in the direction of the

enemy, while the remainder was pushed out backwards through a venturi.

While the resulting weapons did achieve the desired weight reduction, they also shared singular disadvantages over conventional artillery pieces. First, the counterblast of gas through the venturi could cause serious burns even if it did not kill, so supporting troops had to be warned to keep well clear of a generous arc behind the guns. Second, the same counterblast threw up an enormous cloud of smoke, dust and debris that immediately exposed the gunners to a hail of counter-battery fire. And third, those same drawbacks prevented the guns from being dug in to protective firing pits. They also required roughly four times the propellant charge of a conventional gun of equivalent calibre (because most of it was ‘thrown away’) so were expensive to operate.

Lessons learned

It is ironic that at the end of the day the Germans and their opponents should have put completely different interpretations on the airborne operations of 1940–41. In June 1940 they were in agreement; Student successfully campaigned for 7 Flieger Division to be expanded so that it could do its job properly, while Winston Churchill ordered the creation of a British airborne corps of at least 5,000 men. After Crete, though, all that the Allies saw was the Fallschirmjäger victory and their own defeat; they did not realise the cost in German lives. Thus, while the British and Americans continued urgent development of glider and parachute formations, in Germany the parachutes were put into storage and the Ju 52s and DFS 230s assigned more mundane duties. Although Göring did persevere with the creation of new so-called 'Fallschirm' divisions, they were mostly paratroops in name only apart for cadres of survivors from the original battalions.

One lesson learned in 1940 and reinforced in 1941 was the paratroops' vulnerability to anti-aircraft fire so, although the Germans never even seriously practised night drops, the Americans and British used the superiority of their airborne radar in 1943–44 to concentrate on this. The invasions of Sicily in 1943 and Normandy in 1944 were spearheaded by paratroops dropped at night. The only time the Germans attempted even a battalion-size night drop, at the beginning of the Battle of the Bulge in December 1944, it was a disaster.

Perhaps the most important lesson learned by both sides during the blitzkrieg era was the paras' even greater vulnerability unless more substantial ground or amphibious forces could reinforce them very quickly. The Germans almost failed on Crete because of this and the Allies did fail at Arnhem for the same reason. The need for parachute-droppable artillery has already been noted and was appreciated by both sides. The Allies also learned through the extensive Fallschirmjäger use of sub-machine guns to increase the relatively light airborne forces' firepower and, although they were shoddy weapons compared to the MP40, the British Sten and American M3 'grease gun' were rushed into production with the paras' needs a major consideration.

Crete, in particular, also taught the need for both adequate reconnaissance of DZs and LZs and for accurate navigation to get the men on target. In 1940–41 the Germans lost many men through failures in both and by June 1944 the Allies had created specially trained pathfinder teams, but even then the American 82nd and 101st Airborne Divisions in particular suffered heavily through widespread dispersal when dropped over the Cotentin peninsula.

In the decades following the end of World War II the value of paratroops has frequently been questioned, especially since the advent of genuine combat helicopters and 'airmobile' units, but they are still retained by most nations because of that simple capability that the Fallschirmjäger created of being able to strike hard, suddenly and unexpectedly, throwing the enemy completely off balance as Benjamin Franklin predicted so long ago.

Glossary

Note: German words identical or very similar to English are not included, eg, Armee, Bataillon, Kompanie, Korps. German ranks are not included – see table of comparative ranks on page 94.

Abbreviations

AG Aktiengesellschaft, British public limited company, plc; US corporation, Inc

DFS Deutsches Forschungsinstitut für Segelflug, German Sailplane Research Institute

DLV Deutsche Luftsportverband, German Air Sport Association

DZ Drop zone

Erma Erfurter Maschinenfabrik

FG Fallschirmgewehr, parachute rifle

FH Feldhaubitze (pl -e) Field howitzer(s)

FJR Fallschirmjäger Regiment

Flak Flugzeug-abwehr-kanone, anti-aircraft gun

Gew Gewehr, rifle

GrW Granatwerfer, mortar

IG Infanteriegeschütz, infantry gun

IR Infanterie Regiment

JG Jagdgeschwader, Fighter Wing

k kurz or kurzer, short or shorter

Kar Karabiner, carbine

KG Kampfgeschwader, Bomber Wing

-r Kampfgruppe, Bomber Group

-**rzbv** Kampfgruppe zur besonderen Verwendung, Bomber Group for special disposal, ie, Ju 52 unit

l, le leichte, light as in weight or calibre

LG Lehrgeschwader, Demonstration Wing

LLStR Luftlande-Sturm Regiment, Airlanding Assault Regiment

LZ Landing zone

MG Maschinengewehr, machine-gun

mot motorisiert, motorised

-**Z** motorisiert Zusammen, fully motorised

MP (a) Maschinenpistole, machine-pistol or sub-machine-gun; (b) Military Police

MT Mechanical or Motor Transport

NSDAP National-Sozialistisches Deutsche Arbeiter-Partei,

National Socialist German Workers' Party

NSFK National-Sozialistisches Fliegerkorps, National Socialist Flying Corps

OK Oberkommando, High Command

-**H** des Heeres, of the Army

-**L** der Luftwaffe, of the Air Force

-**M** der Marine, of the Navy

-**W** der Wehrmacht, of the armed forces

PaK Panzer-abwehr Kanone, anti-tank gun

Pz Panzer, armoured

-**Kpfw** Panzer-Kampfwagen, tank

-**Spä** Panzer-Spähwagen, armoured car

RLM Reichsluftfahrtministerium, Air Transport Ministry

R/T Radio Telephony

RZ Rückenpackung Zwangauslösung, 'self-opening rucksack', ie, parachute pack

s schwere, heavy as in weight or calibre

SA Sturmabteilung, the brownshirt stormtroopers

SdKfz Sonderkraftfahrzeug, special purposes vehicle
sPzB schwere Panzerbüchse, heavy anti-tank rifle
StG Sturmgewehr, assault rifle; or Sturzkampfgeschwader, dive-bomber Wing
tmot teil motorisiert, partially motorised
T/O&E Table of Officers & Enlisted or Organisation & Equipment,
depending upon context
W/T Wireless Telegraphy
zbV zur besonderen Verwendungs, for special disposal
ZG Zerstörerengeschwader, 'destroyer' Wing (Bf 110s)

German terms

Abfeuern Firing, as in the paired gun components of an artillery battery
Absetzer Dispatcher
Abteilung Detachment, usually applied to approximately battalion-size units
Abwehr Central German intelligence agency run by Admiral Wilhelm Canaris
Adjutantur Personnel department
Amt Department or office
 -mann Civil servant
Arbeitskommando Labour Command
Arzt Doctor
Auftragstaktik Instructional tactics, ie, subject to interpretation
Aufrechterhaltung Maintenance
Ausbildung Building, training, development
Ausrüstung Equipment (qv Gerät)
Bäckerei Baker's
Bau Construction
Befehlstaktik Ordered tactics, ie, not to be varied
Beobachtung Observation
Betriebsstoff Petrol management
Brigadeführer SA and SS rank equivalent to Generalleutnant
Brotbeutel Bread bag
Brücke(n) Bridge (bridging)
 -gerät Bridging equipment
Erprobungßtelle Test Centre
Ersatz Replacement
Fall Gelb Case Yellow, codename for the invasion of the west in May 1940
Fallschirm Parachute
 -jäger (no pl) Parachute light infantry
 -truppe Paratroops
Feld Field
 -ersatz Field replacement
 -gendarmerie Military police
 -lazarette Field hospital
Fern Long distance
 -melde Telecommunication(s)
 -sprech Telephone
Flammenwerfer Flamethrower
Fleischerei Butcher's
Flieger Flying, usually translated as Air or Airborne
 -Korps Air or Airborne Corps
 -schule Flying School
 -zentrale Central Flying Office
Flug Flight
 -gerät Air weapons
 -kapitän Flight Captain, a civilian rank equal to Squadron Leader
 -zeug Aircraft
Forschung (in compounds -s) Research

Führungsabteilung 'Leadership' or tactical department
Funk Radio
Gebirgs Mountain or Alpine
 -jäger (*no pl*) Mountain light infantry
 -truppe Mountain troops
Gefechts Skirmish
Gepäck Baggage (train)
Gerät Equipment
Geschütz (*pl -e*) Gun(s)
Geschwader (*no pl*) Wing(s), equivalent of RAF Group(s)
Gesellschaft Company, firm
Gewehr Rifle
Gliederung Establishment, strength
Grenz Border, frontier
Gruppe (*pl -n*) Air Group(s), equivalent of RAF Wing(s)
Haib Half, eg. Halb-Zug, half-platoon
Heer German Army
Heeresgruppe Army Group (alternative to *Armeegruppe*)
Heeresleitung (Department of) Army Direction, forerunner of the OKH
Hitlerjugend Hitler Youth
Ise Actual, as of establishment
Kampf Fight, struggle, battle, war or, of aircraft, bomber
 -*geschwader* Bomber Wing
 -*gruppe* Bomber Group (*Luftwaffe*) or Battlegroup (*Heer*)
Karabiner Carbine
Kesselschlacht 'Cauldron battle'
Kette Flight of normally 3-6 aircraft
Ketten Chain-drive, ie, tracked
Kolonne (*pl -n*) Column(s)
Kommandeur Commander
 -*ierender* Commanding, as in Commanding Officer
 -*o* Command or commando
Kradschützen Motorcycle rifle
Kraft Power, strength
 -*fahrzeug* Motor vehicle
 -*wagen* Motor vehicle (alternative)
Krankenwagen Ambulance
Kriegspiel Wargame
Land Province
 -*espolizei* Provincial Police
Lastensegler Cargo glider(s)
Leibstandarte Lifeguard
leichte light, as in weight or calibre
Leuchtpistole Flare pistol
Luft Air
 -*aufsicht* Air section
 -*fahrt* Transport
 -*flotte* (*pl -n*) Air Fleet(s)
 -*gau* (*pl -e*) Air Zone(s)
 -*lande* Airlanding
 -*waffe* German Air Force from 1935
Maschinengewehr Machine gun
Mörser Mortar
Nachrichten Signals
Nachschub Supply
Panzer Tank, or armoured
 -*büchse* Anti-tank rifle

-granate Anti-tank grenade
 -truppe Armoured troops
Pionier (*pl -e*) Combat engineer(s)
Quartiermeister Quartermaster or supply officer/department
Rationen Rations
Reich (*os compound -s*) Empire
 -luftfahrtministerium Air Transport Ministry
 -wehr The inter-war German armed forces, renamed Wehrmacht in 1935
Sanitäts Medical
Schleppgruppe Tow group, DFS 230 cargo glider unit
Schützenkompanie Rifle Company
Schwadron (*pl -e*) (Cavalry) Squadron (Heer)
schwere heavy, as in weight or calibre
Schwerpunkt Main axis or striking point of a heavy blow
Segelflug Sailplane, glider
Soll Intended, as in meeting target
Sonderkommando Special operations command or commando
Spähwagen Armoured car
Stab Staff
 -schef Chief-of-staff
Staffel Squadron (Luftwaffe)
Stahl Steel
 -helm (*pl -e*) Steel helmet(s)
Standarte Standard, SA and SS equivalent of regiment
Sturm Storm, assault
 -abteilung Assault Detachment
Taktik Tactic
Taktische Tactical
Team Team, squad
Technische Technical
Tropisch Tropical
Trupp (*pl -e*) Troop(s)
Truppenamt Trooping Office
Übung Military exercise
Unternehmen Undertaking
Versorgungs Supply
Versuch (*in compounds -s*) Test, experiment(al)
Veterinär Veterinary
Waffen Weaponed, armed
Wehrkreis (*pl -e*) Military District(s)
Wehrmacht German armed forces from 1935, excluding the SS
Welle (*pl -n*) Wave(s)
Werke Works, factory
Wetterungs Weather, meteorological
Zerstörer Destroyer, eg, Bf 110
 -taktik Sabotage tactics
Zug (*pl Züge*) Platoon(s)

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Appendices

1mm = 0.039in.

10mm = 1cm = 0.394in.

25.4mm = 1in. (rough conversion 25mm to an inch)

100mm or 10cm = 3.94in.

1,000mm or 100cm = 1m = 39.47in. or 1.094yd

1,000m = 1km = 0.6214 mile (rough conversion, to translate kilometres into miles multiply by 5 and divide by 8, and vice versa)

1kg = 2.205lb

1,000kg = 1 tonne = 20 cwt (UK) 0.984 ton, while 0.907 tonne = 2,000lb = 1 ton (US)

1 litre = 1.76 pints

4.54 litres = 1 gallon

German ranks with allied equivalents

Heer und Luftwaffe	British Army	Royal Air Force	US Army/USAAF
Generalfeldmarschall	Field-Marshal	Marshal of the RAF	5-Star General
Generaloberst	General	Air Chief Marshal	4-Star General
General der... (see note)	General	Air Marshal	3-Star General
Generalleutnant	Lieutenant-General	Air Vice-Marshal	2-Star General
Generalmajor	Major-General	Air Commodore	1-Star General (Brigadier)
Oberst	Colonel	Group Captain	Colonel
Obersteutnant	Lieutenant-Colonel	Wing Commander	Lieutenant-Colonel
Major	Major	Squadron Leader	Major
Hauptmann	Captain	Flight Lieutenant	Captain
Oberleutnant	Lieutenant	Flying Officer	1st Lieutenant
Leutnant	2nd Lieutenant	Pilot Officer	2nd Lieutenant
Fähnrich	Ensign	Officer Cadet	Officer Cadet
Stabsfeldwebel	Staff Sergeant	Warrant Officer	Warrant Officer
Hauptfeldwebel	Regimental Sergeant-Major	Flight Sergeant	1st Sergeant
Oberfeldwebel	Sergeant-Major	Flight Sergeant	Master Sergeant
Feldwebel	Company Sergeant-Major	Sergeant	Technical Sergeant
Unterfeldwebel	Sergeant	(No equivalent)	Staff Sergeant
Unteroffizier	Sergeant	Corporal	Sergeant
Hauptgefreiter	Corporal	(No equivalent)	Sergeant
Obergefreiter	Corporal	Senior Aircraftman	Corporal
Gefreiter	Lance-Corporal	Leading Aircraftman	Acting Corporal
Oberschutze/Oberjäger/Flieger	Private	Aircraftman 1st Class	Private First Class (PFC)
Schutze/Jäger/Flieger	Private	Aircraftman 2nd Class	Private

Note: 'General der ...' was followed by the officer's arm of service, eg. General der Flieger, General der Infanterie, General der Panzertruppe, etc.

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